

**Schull Harbour Development,
Schull, Co. Cork**

**Environmental Impact Statement
Supplementary Report**

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Cronin Millar
Consulting Engineers

Civil • Marine • Structural • Environmental

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Revision Control Table & Document History Record

Rev.	Date	Description & Reason for Issue	Orig.	Chkd.	App.
1	03/02/2012	<i>Foreshore Licence Application</i>	SMC	AC	AC

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1.0 Introduction

This report shall be read in conjunction with “Schull Harbour Development Environmental Impact Assessment” and all other documentation submitted to the Department of Environment, Heritage and Local Government.

The Environmental Impact Assessment (EIA) was produced by ATKINS for Schull Community Harbour Development Company Ltd. (SHCDC) in 2006. Planning permission for the development was granted by Cork County Council on 12 April 2007 (Planning Reg. No: 06/1375).

Since planning permission was received, the scope of the proposed development has been reduced to meet the requirements of the Department of Environment Heritage and Local Government Foreshore Section, and due to funding constraints.

The purpose of this supplementary report is to highlight the changes to the proposed development and to identify the reduced impact the changes will have on the various elements assessed in the EIA.

2.0 Key Project Alterations

The original project proposal was to extend the existing pier to accommodate inshore fishermen and ferry operators, to provide breakwaters for increased protection to the inner harbour, and to construct a marina for leisure craft within the inner harbour in Schull. The original proposed development comprised the following key features:

- 100m pier extension;
- 150m rock armour breakwater to south;
- 212m rock armour breakwater to east;
- 225 berth marina;
- 1.05ha foreshore reclamation;
- 10m wide leisure craft slipway;
- Landside amenities including public promenade; 130 space carpark; dinghy park area; and a utilities building.

Following preliminary conversations with the Department of Environment, Heritage and Local Government (Foreshore Section) Engineering Division, and due to funding constraints, the scope of the development has been reduced. The development will still facilitate the requirements of SCHDC. The new proposed development comprises of the following elements:

- 270m rock armour breakwater to south;
- 220m reinforced concrete floating breakwater to east;
- 178m commercial berthing pontoon to south;
- 235 berth marina;
- 0.55ha foreshore reclamation;
- 10m wide leisure craft slipway;
- Landside amenities including public promenade; 95 space carpark; dinghy park area; and a small utilities building.

Drawing No. C347/F/7 provides details of the original project proposal and Drawing No. C347/F/3 indicates the changes to the plan of the proposed development.

Table 2.1 below highlights the reasons for changes to the proposed development.

Element	
Exclusion of 100m pier	The cost of providing the 100m pier would be prohibitive. Commercial landings will be accommodated at the existing pier and through the provision of commercial pontoons.
270m rock armour breakwater to south	The breakwater to the south will provide protection from wave climate in place of the 100m pier and 150m rock armour breakwater.
Floating Breakwater to East	It is proposed to install a 220m long reinforced concrete floating breakwater to the east of the marina in place of the 220m long rock armour breakwater. This will provide appropriate shelter from wave action, and will facilitate future extension if required.
Marina	The marina will be increased from 225 berths from 235 berths

	through a redesign of the marina layout. This allows for more efficient use of the marina space.
Foreshore Reclamation	The area of foreshore to be reclaimed will be reduced from 1.05ha to 0.55ha. This is facilitated through a reduction in car parking spaces and reduced scale of the utilities building.
Car parking	The number of car parking spaces has been reduced after discussions with Cork County Council. Additional cars may be facilitated in existing private and public carparks in the town. This has resulted in a reduced area of foreshore to be reclaimed.
Utilities Building	The scale of the utilities building has been reduced to provide a more cost effective facility for the client.

Table 2.1 Proposed Development Changes

3.0 Planning Context and Human Beings

3.1 Population, Employment and Economic Activity

As with the originally proposed development, the newly proposed development will have a significant positive impact 'in terms of enhancing and facilitating the economic and socio-economic development of Schull'. An increase in commercial and tourism activity within the harbour will result in a positive impact on the economy of the local area due to the increase in direct and indirect jobs.

Impacts during the construction stage of the revised plan will be less than that of the originally proposed plan, due to the omission of the 212m rock armour breakwater to the east.

Small fishing boats will be removed from the swing mooring field but will be accommodated at the new commercial pontoon. Larger fishing vessels will be required to berth at alternative ports during the construction phase.

3.2 Land Use

Impacts on land use associated with the revised development will be similar to that of the originally proposed development.

3.3 Tourism and Recreation

It is anticipated that the increase in the number of visitors to Schull associated with the revised development will be similar to that of the original development. The construction period would be reduced due to the omission of the rock armour breakwater to the east; however there may still be the potential for a negative impact to tourism and recreation during the construction period.

3.4 Health and Safety

It is anticipated that the impacts on Health and Safety associated with the revised development would be similar to that of the originally proposed development. Construction risks shall be reduced due to the reduced construction period and the omission of the rock armour breakwater to the east. The Project Supervisor Design Phase would be Cronin Millar Consulting Engineers.

3.4 Mitigation Measures

The mitigation measures proposed in the EIA remain the same for the revised development.

4.0 Traffic

Atkins Ireland carried out a Traffic Impact Assessment (TIA), as part of the EIA.

4.1 Traffic Generated by Proposed Development

The originally proposed development included a 225 berth marina, with the new proposed development including a 235 berth marina. This results in an increase of approximately 4.5% of potential visitors to the marina, thus a similar potential increase in car trips to and from the marina, i.e. 117 peak day trips in and 115 peak day trips out.

It is anticipated that there will not be a net increase in traffic on the Pier Road by installing commercial pontoons to the east of the existing Town Pier as opposed to extending the Town Pier. The commercial pontoons would provide the equivalent number of berths as the originally proposed pier extension, therefore the increase in traffic will be as per the TIA.

4.2 Parking

It was originally proposed to provide 130 parking spaces for the proposed marina development. Following consultation with Cork County Council, it was agreed that the number of car parking spaces should be reduced to 95 parking spaces. This will result in a reduced area of foreshore being reclaimed.

4.3 Proposed Development Traffic Distribution

It is anticipated that the two-way peak hour traffic flows would increase as described in the original EIS.

4.4 Construction Period Traffic Generation

It is anticipated that construction of the development will commence in January 2013.

The amended proposed construction phases, with estimated construction periods for the various elements of the development and estimated numbers of construction employees provided in brackets after each item, are as follows:

- Phase 1** – 270m rock armour breakwater to south, 18months, (10-14 People).
- Phase 2** – Installation of marina, floating breakwater to east, and commercial pontoons, 4-6 months, (4-6 people).
- Phase 3** – Reclamation of foreshore, construction of slipway and access road (to overlap with rock armour breakwater), 6-8 months, (10-14 people).

The estimated HGV loads during construction will be significantly less than the originally proposed development due to the exclusion of the pier extension and rubblemound breakwater to the east, and the reduced scale of the foreshore reclamation and marina facilities building. The number of HGV loads for the marina development will increase slightly due to the additional installation of the floating concrete breakwater and commercial pontoons. There will therefore be a net reduction in the traffic generated during the construction phase.

5.0 Flora and Fauna

The impact of the development on terrestrial ecology was assessed as part of the original EIS.

5.1 Construction Impacts

Impacts on flora, fauna, and habitats will be similar to that as assessed in the ecological report, if not reduced slightly.

The scale of the proposed foreshore reclamation will be reduced from the originally proposed development. This will result in a shorter works programme, thus reducing the impacts on fauna.

The rubblemound breakwater to the east shall now be omitted. This will result in fewer disturbances to flora and fauna.

5.2 Operational Impacts

The operational impacts to the area will be similar to that as described in the original EIS.

An Appropriate Assessment and Natura Impact Statement was carried out for the new proposed development. This document is appended to the Foreshore Lease/Licence application.

6.0 Marine Ecology

The impacts of the revised proposed development on Marine Ecology are addressed as part of the Appropriate Assessment and Natura Impact Statement. This document is appended to the Foreshore Lease/Licence application.

7.0 Geology and Hydrogeology

The impacts of the revised proposed development on geology and hydrogeology will be similar to that of the originally proposed development.

The potential of ground water contamination during the construction stage will be reduced due to the shorter construction phase associated with the omission of the rubble mound breakwater to the east and the reduced scale of land reclamation.

8.0 Coastal Processes

8.1 Wave Conditions within Marina Basin

Chapter 8 of the EIS submitted to Cork County Council provides a summary of the Numerical Model Study prepared by the Hydraulic and Maritime Research Centre, University College Cork (HMRC). The chapter presents the preferred development option, which includes the extension of the pier, the rubblemound breakwater to the south, and the rubblemound breakwater to the east.

Due to the reasons outlined in Section 1.0 of this EIS Supplementary Report, a redesign of the harbour layout has been proposed. To ensure the viability of this layout, Cronin Millar re-assessed the Numerical Model Study.

The Numerical Model Study presents 10 separate harbour layouts and provides simulations for each of the layouts. The study summarises that the chosen option is Layout No. 10. This layout comprises a 100m pier extension, with 150m rubblemound breakwater to the south and a rubblemound breakwater to the east.

The study uses a criterion of 0.3m for the significant wave height within the marina basin as a design parameter. The study states ***“It should be noted that the general requirement for marinas is that the maximum wave height should not exceed 0.3m. However this rule is only strictly applicable to locally generated waves that have periods less than 4 seconds. Such waves are short in length and so are relatively choppy and can cause large motions to moored vessels. For Schull such waves are not really applicable and the most severe loading is caused by swell waves, which have high periods. These waves can have a long wavelength and when the wave height is low may not be directly observable.”*** Despite this, the maximum wave height of 0.3m was used as the design parameter. The maximum wave height for the majority of the area within the harbour basin (Layout No. 10) was predicted to be 0.2-0.3m for a design wave with a return period of 50 years.

The new proposed harbour layout will comprise of a 270m rubblemound breakwater to the south, with a 220m floating concrete breakwater to the east. This harbour layout is similar to that as modelled in Layout No. 9. Through the inclusion of an ‘absorbing’ revetment to the front of the reclaimed foreshore at the carpark, the maximum wave height for the majority of the area within the harbour basin was predicted to be 0.3-0.4m. This is also for a design wave with a return period of 50 years.

Regarding design wave height, BS6349:Part1:1984 states “Although important, such criteria are rarely given in published literature and since the opinion of harbour masters can be expected to vary, the quoted figures should be taken as general guidance”. This standard gives guidance to the maximum wave height within a marina of 0.3m, or 0.8m within a fishing harbour.

Tsinker, 1995, (Marine Structures Engineering – Specialized Applications) states that “The criteria for acceptable wave actions are that the significant height of any wave episode should

not exceed about 0.5 to 1.5m in the entrance channel, and 0.25 to 0.5m in the berthing areas, depending on the craft using the marina”.

Figures 5.33b – 5.35b of the Numerical Model Study provide a plan of the model output plots for the design wave heights, for various wave periods. Considering Figure 5.35b, which is the worst case scenario within the harbour basin, it can be seen that the maximum significant wave height within the harbour basin is 0.4m. At the eastern end of the basin, where the floating breakwater is proposed, the significant wave height increases to approximately 0.6m. This value is slightly higher than the maximum recommended wave height, but it must be noted that this is a 1 in 50 year storm event. Also, berthing will not take place in the location of the floating breakwater, so the risk of craft being subject to this wave height is very low as navigation in this area should not occur during extreme weather events.

8.2 Hydrodynamic / Tidal Flows

The proposed revised development will not impact significantly on hydrodynamic / tidal flows.

8.3 Sediment Transport

The proposed revised development will not impact significantly on sediment transport.

9.0 Landscape and Visual

A landscape and visual assessment was carried out for the proposed original development. It is envisaged that the proposed revised development will have less of an impact on the existing landscape character and visual amenity than the originally proposed development.

9.1 Predicted Impacts

The principal elements of the development which will be visible during the construction and operational period and which may lead to landscape or visual impacts are listed below:

- Construction traffic, earth works and dust arising from the construction process (*Construction traffic is reduced with the revised proposed development*);
- Proposed marina facilities building (*Reduced in scale from originally proposed plan*);
- Large plant and construction machinery;
- Construction compounds;
- New yacht marina;
- Rubblemound breakwater to south (*Rubblemound breakwater to the east is now omitted*);
- Car parking (*95 spaces reduced from 130 previously*);
- Car park lighting within the site and illumination of the proposed marina facilities building (*the scale of both have been reduced*);
- Movement of traffic within the site

The scale of the development has been reduced since the originally proposed development. It is therefore envisaged that the landscape and visual impacts associated with the development will be reduced.

10.0 Archaeology and Cultural Heritage

A cultural heritage assessment of the area intended for development was carried out as part of the EIA.

10.1 Construction Impacts

The assessment concluded that ***“the construction of the proposed development will not impact on any visible sites of archaeological/cultural heritage interest in the terrestrial, foreshore and underwater areas. Although previous developments have impacted on all three areas of the proposed development site, it is still possible that archaeological/cultural heritage remains lie intact below the surface.”*** The scale of the proposed development has since been reduced, therefore the risk of impacts to sites will be reduced.

10.2 Operational Impacts

The assessment summarised that the operational phase of the development will not have significant impacts on known archaeological sites, therefore it is anticipated that the proposed revised development will not impact on known archaeological sites.

10.3 Mitigation Measures

The mitigation measures proposed in the EIS will be enforced for the proposed revised development.

11.0 Air Quality

An assessment of air quality was carried out for the proposed original development as part of the EIA. The assessment concludes that the impacts to air quality can arise from the construction phase and the operational phase.

11.1 Construction Impacts

Air quality can be affected by the dust generating activities during construction and by emissions from construction vehicles. Due to the omission of the rubble mound breakwater to the east, it is envisaged that these impacts are reduced due to a smaller number of construction vehicles.

11.2 Operational Impacts

The proposed revised development will comprise of a very small increase in vehicles arriving to the site.

The assessment concluded that the originally proposed harbour development is predicted to have a negligible effect on air quality in the assessed area. It is therefore envisaged that the proposed revised development will have a negligible effect on air quality also.

12.0 Noise and Vibration

An assessment of the construction and operational noise impact from the proposed original development was carried out as part of the EIA.

The noise impact during the construction phase will be less than that of the originally proposed development due to the omission of the pier and rubblemound breakwater to the east. The mitigation measures proposed in the EIA will be enforced during the construction stage.

Noise generated during the operational phase will generally be due to vehicle traffic. The revised proposed layout will result in a very slight increase in vehicle traffic during the operational phase. This level of noise generated was deemed to 'not be perceptible'.

13.0 Material Assets

An assessment of the impact of the proposed original development on material assets in Schull was carried out as part of the EIA. This included impacts to transport infrastructure, recreational facilities/amenities, public utilities, undeveloped land resource, geological resource, and natural amenities.

The assessment concluded the following:

- The harbour development will not have a significant impact on the candidate Special Area of Conservation, and will have a positive impact on landscape and visual impact.
- The upgrading of the harbour will improve the amenity value of the harbour, however there will be a short term negative impact during the construction phase.
- Public utilities (electricity, water, etc) have the capacity to accommodate the proposed original harbour development.
- Public access to the Harbour area may be limited during the construction period.
- The proposed development will have a positive long term impact on the material assets of the harbour.

It is envisaged that the proposed revised harbour development will have similar impacts on the material assets of Schull Harbour, however the construction period is estimated to be shorter, thus reducing the potential negative impact during this period.

14.0 Fluvial Processes

The EIA assessed the potential of sediment loadings arising from 'Schull Stream' which may result in the requirement for maintenance dredging within Schull Harbour. Information regarding sediment loading within the stream did not exist, so the assessment proposed various mitigation measure options to be activated if sedimentation became an issue.

For the proposed revised development, it is envisaged that these mitigation measures will be applied if sedimentation becomes an issue.

15.0 Interaction between Environmental Factors

Chapter 15 of the EIS addressed the interactions between the various aspects of the EIA. It is envisaged that all of these interactions between the various aspects for the proposed revised development will be similar to that of the originally proposed development.