

Appendix 1B

EIA Study Brief Checklist

Brief Ref. #	Summary	EIA sections
2	Objectives of the EIA Study	
2.1 (i)	Describe the Project and associated works together with the requirements and environmental benefits for carrying out the Project.	1 - 2
2.1 (ii)	Identify and describe elements of community and environment likely to be affected by the Project and/or likely to cause adverse impacts to the Project, including natural and man-made environment and the associated environmental constraints.	3 - 10
2.1 (iii)	Consider alternative options with a view to avoiding and minimizing the potential environmental impacts to ecological sensitive areas in the Mirs Bay, Port Shelter, Junk Bay, Eastern Buffer and Southern Buffer Water Control Zones and other sensitive uses; to compare the environmental benefits and dis-benefits of each of the different options; to provide reasons for selecting the preferred option(s) and to describe the part of environmental factors played in the selection.	2
2.1 (iv)	Identify and quantify any potential loss or damage and other potential impacts to ecology and fisheries resources, flora, fauna and natural habitats and to propose measures to mitigate these impacts.	5 - 8
2.1 (v)	Identify and quantify emission sources and determine the significance of impacts on sensitive receivers and potential affected uses.	3 - 8
2.1 (vi)	Identify and quantify any potential landscape and visual impacts and to propose measures to mitigate these impacts.	10
2.1 (vii)	Identify the negative impacts on any historical and archaeological resources and to propose measures to mitigate these impact.	9
2.1 (viii)	Propose the provision of mitigation measures so as to minimize pollution, environmental disturbance and nuisance during construction and operation of the Project.	3 - 10
2.1 (ix)	Investigate the feasibility, practicability, effectiveness and implications of the proposed mitigation measures.	3 - 10
2.1 (x)	Identify, predict and evaluate the residual environmental impacts (i.e. after practicable mitigation) and the cumulative effects expected to arise during the construction and operation of the Project in relation to the sensitive receivers and potential affected uses.	3 - 10
2.1 (xi)	Identify, assess and specify methods, measures and standards, to be included in the detailed design, construction and operation of the Project which are necessary to mitigate these environmental impacts and cumulative effects and reduce them to acceptable levels.	3 - 10

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2.1 (xii)	Investigate the extent of the secondary environmental impacts that may arise from the proposed mitigation measures and to identify constraints associated with the mitigation measures recommended in the EIA study, as well as the provision of any necessary modification.	3 - 10
2.1 (xiii)	Design and specify environmental monitoring and audit requirements to ensure the effective implementation of the recommended environmental protection and pollution control measures.	3 - 10
3.4.1	Water Quality	4
3.4.1.1	Follow the criteria and guidelines for evaluating and assessing water pollution as stated in Annexes 6 & 14 of the TM respectively.	4.3
3.4.1.2	Study area shall cover the Mirs Bay, Port Shelter, Eastern Buffer and Junk Bay Water Control Zones, as designated under the Water Pollution Control Ordinance (WPCO).	4.3
3.4.1.2	Sensitive receivers including but not limited to habitats / species of conservation importance, such as coral communities, marine mammals, amphioxus (<i>Branchiostoma spp.</i>), areas of fisheries interest, fish spawning grounds, fish culture zones, bathing beaches and secondary contact recreation zones and sea water intakes shall be addressed in the water quality assessment.	4.5.2
3.4.1.3	Identify and analyse physical, chemical and biological disruptions of marine water system(s) arising from project construction and operation of the Project.	4.7 - 4.8
3.4.1.4	Predict, quantify and assess any water quality impacts arising from the Project on the water system(s) and the sensitive receivers by appropriate mathematical modelling and / or other techniques proposed to and approved by the Director.	4.4 - 4.6
3.4.1.4	Possible impacts shall include but not be limited to changes in hydrology, flow regime, sediment erosion and deposition pattern, water and sediment quality due to marine piling works, dredging of marine sediment for submarine cables, effects on the flora and fauna due to such changes in the study area.	4.4 and 4.7 - 4.8
3.4.1.5	Take into account and include likely different construction stages or sequences of the Project in the assessment.	4.4 and 4.7
3.4.1.5 (i)	Collection and review of background information on the existing and planned water system(s) and their respective sensitive receivers;	4.5
3.4.1.5 (ii)	Characterisation of water and sediment quality of the water system(s) and sensitive receivers based on existing information or appropriate site survey and tests.	4.5 and 4.7.2 - 4.7.3
3.4.1.5 (iii)	Identification and analysis of the existing and planned future activities and beneficial uses related to the water system(s),	4.5.2, 4.7.4 and

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	and identification of the water sensitive receivers.	4.8.2
3.4.1.5 (iv)	Identification of pertinent water and sediment quality objectives and establishment other appropriate water and sediment quality criteria or standards for the water system(s) and all the sensitive receivers in sub-section 3.4.1.5 (i).	3.4 and 4.7
3.4.1.5 (v)	Evaluation of the spatial design of the wind farm, foundation types, construction sequences and methods, and operation; consider all best practical arrangements to avoid adverse effects of the Project on the ecological sensitive sites due to changes of local erosion and sedimentation patterns;	2 and 4.7 - 4.10
3.4.1.5 (vi)	Identification and quantification of existing and committed water and sediment pollution sources and loading, including point and non-point discharges, during the construction and operation stages of the Project;	4.5 and 4.7 - 4.8
3.4.1.5 (vii)	Establishment and provision of a pollution load inventory on the quantities and characteristics of existing and likely future water pollution sources. Field investigation and laboratory tests shall be conducted as appropriate to fill in any major information gaps;	4.4 - 4.5, 4.7 - 4.8 and 4.10
3.4.1.5 (viii)	Analysis on the provision of wastewater treatment facilities in terms of capacity and level of treatment to reduce pollution arising from both the point and non-point discharges identified in (vi)	4.7 - 4.8
3.4.1.5 (ix)	Identification and evaluation of the best practicable dredging methods to minimize dredging and dumping requirements and demand for fill sources based on the criterion that existing marine mud shall be left in place and not to be disturbed;	2, 3.2 and 3.4 - 3.5
3.4.1.5 x(x)	devise mitigation measures to avoid or minimize the impacts identified above, in particular suitable dredging and disposal methods shall be recommended to mitigate any adverse impacts. The residual impacts on the water system(s) and the sensitive receivers with regard to the relevant water and sediment quality objectives, criteria, standards or guidelines shall be assessed and quantified using appropriate mathematical models set out in Appendix B to this study brief.;	3.6 and 4.9 - 4.10
3.4.1.5 (xi)	Assessment of the cumulative impacts due to other related concurrent and planned projects including the mud dumping activities near Ninepins Islands, and potential sand reserves in the eastern waters activities or pollution sources along the identified water system(s) and sensitive receivers that may have a bearing on the environmental acceptability of the Project. This shall include the potential cumulative construction and operational water quality impact arising from, <i>inter alia</i> , other pollution sources within the study area;	4.7.4
3.4.1.5 (xii)	Evaluation of the potential for and associated water quality impacts arising from accidental vessel collisions within the Project area during construction and maintenance of the wind farm. The Applicant shall devise a contingency plan for control and mitigation of the associated pollution impacts as identified above.	2 and 4.8

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3.4.1.5 (xiii)	Identification and quantification of all dredging, fill extraction, filling, mud/sediment transportation and disposal activities and requirements. Potential fill source and dumping ground to be involved shall be identified. Appropriate laboratory tests such as elutriate tests (USACE) and sediment pore water (interstitial water) analyses shall be performed on the sediment samples to simulate and quantify the degree of mobilization of various contaminants of concern into the water column during dredging. The ranges of parameters to be analyzed, the number, type and methods of sampling, sample preservation and chemical and biological laboratory test methods to be used shall be subject to the approval of the Director. The categories of sediments which require different types of disposal in accordance with the Environmental, Transport and Works Bureau Technical Circular (Works) No. 34/2002 shall be identified by both chemical and biological tests and their quantities shall be estimated. If the presence of any seriously contaminated sediment which required Type 3 disposal is confirmed, the Applicant shall identify the most appropriate treatment and/or disposal arrangement and demonstrate its feasibility;	3.2, 3.4 - 3.5 and 4.7
3.4.1.5 (xiv)	In case of small scale dredging works, the Applicant shall assess the potential increase in turbidity and suspended solids levels in the water column due to disturbance of marine sediments during dredging. The potential for release of contaminants during dredging shall also be addressed using the chemical and biological testing results derived from sediment samples collected on site and relevant historic data;	4.7
3.4.2	Ecological Impact (Terrestrial and Marine)	5 - 7
3.4.2.1	Follow the criteria and guidelines for evaluating and assessing ecological impact as stated in Annexes 8 and 16 of the TM.	5.3, 6.3 and 7.3
3.4.2.2	The assessment area for marine ecological impact shall cover Port Shelter, Mirs Bay, Eastern Buffer, Junk Bay and Southern Water Control Zones as designated under the Water Pollution Control Ordinance or any areas likely be impacted by the Project.	5.4, 6.4 and 7.4
3.4.2.3	In the ecological impact assessment, the Applicant shall examine the flora, fauna and other components of the ecological habitats within the assessment area. The aim shall be to protect, maintain or rehabilitate the natural environment. In particular, the Project shall avoid impacts on wildlife groups or habitats/ species with conservation interests including but not limited to corals (including all hard corals, octocorals and black corals), marine mammals, amphioxus (<i>Branchiostoma spp.</i>) and avifauna, in particular migratory birds. The assessment shall identify and quantify as far as possible the potential ecological impacts to the natural environment and the associated wildlife groups and habitats/species arising from the proposed Project including its construction and operation phases as well as the subsequent management and maintenance of the proposals.	5.5, 6.5, and 7.5 - 7.6
3.4.2.4	The assessment shall include the following major tasks:	
3.4.2.4 (i)	Review the findings of relevant studies/surveys and collate the available information regarding the ecological characters of the	5.4 - 5.6, 6.4 - 6.5, and 7.4 - 7.6

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	assessment area.	
3.4.2.4 (ii)	Reevaluate information collected and identify any information gap relating to the assessment of potential ecological impact;	5.4 - 5.6, 6.4 - 6.5 and 7.4 - 7.6
3.4.2.4 (iii)	Carry out ecological field surveys and investigations to fill in the information gaps identified in Sections 3.4.2.4 (ii) above and fulfil the objectives of the EIA study. The field surveys shall include but not limited to coral communities, marine benthic communities, marine mammals and avifauna, in particular migratory birds. The benthic survey shall cover at least 6 months duration covering both wet and dry season and the avifauna surveys shall cover at least 9 months covering March to August. The survey for marine mammals shall cover a duration of at least 12 months covering 4 seasons.	5.4 - 5.6, 6.4 - 6.5 and 7.4 - 7.6
3.4.2.4 (iv)	Establish the general ecological profile of the Study Area based on data of relevant previous studies/ surveys and results of the ecological field surveys, and taking into consideration the seasonal variations, and describe the characteristics of each habitat found; major information to be provided shall include:	5.4 - 5.6, 6.4 - 6.5 and 7.4 - 7.6
3.4.2.4 (iv) (a)	Description of the physical environment; including all recognized sites of conservation importance and assess whether these sites will be affected by the proposed Project or not;	5.4 - 5.6, 6.4 - 6.5 and 7.4 - 7.6
3.4.2.4 (iv) (b)	Habitat maps of suitable scale showing the types and locations of habitats/species in the Study Area with special attention to those with conservation interests, including but not limited to the following: <ul style="list-style-type: none"> • coral communities (including all hard corals, octocorals and black corals); • marine mammals, in particular finless porpoises; • any other notable marine benthic or littoral communities, in particular amphioxus, Branchiostoma spp.; • avifauna, in particular migratory birds; and • any other habitats/ species identified as having special conservation interest by this EIA study. 	5.4 - 5.6, 6.4 - 6.5 and 7.4 - 7.6
3.4.2.4 (iv) (c)	Ecological characteristics of each habitat type such as extent, substrate, size, type, species present, dominant species, species diversity and abundance, community structure, ecological value and inter-dependence of habitats and species, and presence of any features of ecological importance.	5.4 - 5.6, 6.4 - 6.5 and 7.4 - 7.6
3.4.2.4 (iv) (d)	Representative colour photos of each habitat type and any important ecological features identified.	5.4 - 5.6, 6.4 - 6.5 and 7.4 - 7.6
3.4.2.4 (iv) (e)	Species found that are rare, endangered and/or listed under local legislation, international conventions for conservation of wildlife / habitats or red data books.	5.4 - 5.6, 6.4 - 6.5 and 7.4 - 7.6
3.4.2.4 (iv) (f)	Investigation and description of the existing wildlife uses of the various habitats with special attention to those wildlife groups and habitats with conservation interests, including but not	5.4 - 5.6, 6.4 - 6.5 and 7.4 - 7.6

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	limited to coral communities, amphioxus, marine mammals and avifauna in the context of the proposal.	
3.4.2.4 (vi)	<p>Using suitable methodology and considering also other works activities from other projects reasonably likely to occur at the same time, identify and quantify as far as possible of any direct (e.g. loss of habitats due to construction of wind turbines, other supporting facilities and laying of submarine cables, etc), indirect (e.g. changes in flight path, water qualities, hydrodynamics properties, sedimentation rates and pattern, hydrology, rotation, noise and other disturbance generated by the wind turbines and other supporting facilities, etc), on-site, off-site, primary, secondary and cumulative ecological impacts such as destruction of habitats, reduction of species abundance/diversity, loss of feeding grounds, reduction of ecological carrying capacity, habitat fragmentation, and in particular the following:</p> <ul style="list-style-type: none"> • deterioration or disturbance to corals (including all hard corals, octocorals and black corals) or other marine habitats/species of conservation value, including any discovered during the course of the study; • removal or disruption of potentially valuable benthic communities, such as amphioxus, Branchiostoma spp.; • impacts to aquatic organisms during construction and avifauna during operational stage due to rotation of the wind turbines, noise produced by the wind turbines and the glare due to reflection of sunlight; • potential impacts of habitat use by marine mammals due to the presence of a contiguous array of turbines within their habitat; and • potential impacts or disturbance (e.g., physical injury, underwater noise) to marine mammals in particular Finless porpoises during construction (e.g., dredging of turbine foundations, cable installations, pile driving for installation of turbine foundations) and during operation (e.g., underwater noise generated by the wind turbines). 	5.7 - 5.9, 6.6 - 6.8 and 7.7
3.4.2.4 (vii)	Evaluation of ecological impact shall be based on the best and latest information available during the course of the EIA study, using quantitative approach as far as practicable and covering construction and operation phases of the Project as well as the subsequent management and maintenance requirement of the proposals.	5.4 - 5.12, 6.4 - 6.10 and 7.4 - 7.9
3.4.2.4 (viii)	Evaluation of significance and acceptability of the ecological impacts identified using criteria in Annex 8 of the TM.	5.7 - 5.9, 5.11, 6.6 - 6.7, 6.9 and 7.7
3.4.2.4 (ix)	Recommendations for all possible alternatives, such as modification/change of layout design, construction site and method, spacing and alignment of wind turbines and submarine cables and practicable mitigation measures to avoid, minimize and/or compensate for the adverse ecological impacts identified during construction and operation of the Project such as, construction of the project at times that minimize impacts to marine mammals, corals, amphioxus and avifauna.	2.4, 2.6 - 2.7, 2.11, 5.10, 5.12, 6.8, 6.10 and 7.8 - 7.9

Brief Ref. #	Summary	EIA sections
3.4.2.4 (x)	Evaluation of the feasibility and effectiveness of the recommended mitigation measures and definition of the scope, type, location, implementation arrangement, resources requirement, subsequent management and maintenance of such measures.	5.7 - 5.12, 6.6 - 6.10 and 7.7 - 7.9
3.4.2.4 (xi)	Determination and quantification as far as possible of the residual ecological impacts after implementation of the proposed mitigation measures.	5.10 - 5.11, 6.8 - 6.9 and 7.7 - 7.8
3.4.2.4 (xii)	Evaluate the severity and acceptability of the residual ecological impacts using the criteria in Annex 8 of the TM.	5.10 - 5.11, 6.8 - 6.9 and 7.7 - 7.8
3.4.2.4 (xiii)	Review of the need for and recommendation for any ecological monitoring programme required.	5.12, 6.10 and 7.9
3.4.3	Fisheries Impact	8
3.4.3.1	Follow the criteria and guidelines for evaluating and assessing fisheries impact as stated in Annexes 9 and 17 of the TM.	8.3
3.4.3.2	Assessment area for fisheries impact assessment cover the Port Shelter, Mirs Bay, Eastern Buffer and Junk Bay Water Control Zones as designated under the Water Pollution Control Ordinance or any areas likely to be impacted by the project. Special attention will be given to the fishing activities within the proposed wind turbine site and Tung Lung Chau fish culture zone within the assessment area.	4.3 - 4.4 and 8.4 - 8.6
3.4.3.3	Assessment covers any potential impact on both capture and culture fisheries, during the construction and operation phase. Existing information regarding the study area shall be reviewed. Based on the review results, the study shall identify data gap and determine if there is any need for field surveys. If field surveys are considered necessary, the study shall recommend appropriate methodology, duration and timing for the field surveys.	8.4 - 8.9
3.4.3.4	The fisheries impact assessment shall include the following tasks.	
3.4.3.4 (i)	Description of the physical environmental background.	8.4 - 8.6
3.4.3.4 (ii)	Description and quantification of the existing capture and culture fisheries activities.	8.5 - 8.6
3.4.3.4 (iii)	Description and quantification of the existing fisheries resources (e.g. major fisheries products and stocks).	8.5 - 8.6
3.4.3.4 (iv)	Identification of parameters (e.g. water quality parameters) and areas that will be affected.	4.3 - 4.4
3.4.3.4 (v)	Identification and quantification of any direct/indirect and onsite/offsite impacts of fisheries.	8.7 - 8.9

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3.4.3.4 (vi)	Evaluation of impacts and make recommendations for any environmental mitigation measures with details on justification, description of scope and programme, feasibility as well as staff and financial implications including those related to subsequent management and maintenance requirements of the proposals.	8.7 - 8.12
3.4.3.4 (vii)	Review the need for monitoring and, if necessary, recommend a monitoring and auditing programme.	8.12
3.4.4	Landscape and Visual Impact	10
3.4.4.1	Follow the criteria and guidelines as stated in Annexes 10 and 18 of the Technical Memorandum and the Guidance Notes EIAO No. 8/2002 on the preparation of Landscape and Visual Impact Assessment under the EIAO.	10.2
3.4.4.2	Assessment area for landscape impact assessment include all areas within a 500m distance from the Project while the assessment area for the visual impact assessment will be defined by the visual envelope of the Project.	10.3
3.4.4.3	Review all relevant plan(s) and/or studies which may identify areas of high landscape value and recommend marine park, country park, coastal protection area, green belt and conservation area designations. Any guidelines on landscape and urban design strategies and frameworks that may affect the appreciation of the Project shall also be reviewed. The aim is to gain an insight to the future outlook of the area affected so as to assess whether the Project can fit into the surrounding setting. Any conflict with statutory town plan(s) and any published land use plans will be highlighted and appropriate follow-up action will be recommended.	10.4
3.4.4.4	Describe, appraise, analyze and evaluate the existing and planned landscape resources and character of the assessment area. Derived for judging landscape and visual impact significance as required under the TM. Annotated oblique aerial photographs and plans of suitable scale showing the baseline landscape character areas and landscape resources and mapping of impact assessment will be extensively used to present the findings of impact assessment. Descriptive text will provide a concise and reasoned judgement from a landscape and visual point of view. The sensitivity of the landscape framework and its ability to accommodate change shall be particularly focused on. The Applicant shall identify the degree of compatibility of the Project with the existing and planned landscape setting. The landscape impact assessment shall quantify the potential landscape impact as far as possible so as to illustrate the significance of such impacts arising from the proposed development. Clear mapping of the landscape impact is required.	10.5
3.4.4.5	Assess the visual impacts of the proposed Project. Clear illustration including mapping of visual impact is required. The assessment shall include the following:	10.6 - 10.7
3.4.4.5 (i)	Identification and plotting of visual envelope of the proposed Project.	10.7

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3.4.4.5 (ii)	Identification of the key groups of sensitive receivers within the visual envelope with regard to views from ground level, sea level and elevated vantage points.	10.5
3.4.4.5 (iii)	Description of the visual compatibility of the proposed Project with the surrounding and the planned setting, and its obstruction and interference with the key views of the adjacent areas.	10.6 - 10.7
3.4.4.5 (iv)	The visual impacts of the proposed Project with and without mitigation measures will be included so as to demonstrate the effectiveness of the proposed mitigation measures.	10.6 - 10.7
3.4.4.6	Evaluate the merits of preservation in totality, in parts or total destruction of existing landscape and the establishment of a new landscape character area. In addition, alternative site, design and construction methods that would avoid or reduce the identified landscape and visual impacts shall be evaluated for comparison before adopting other mitigation or compensatory measures to alleviate the impacts. The mitigation measures proposed shall not only be concerned with damage reduction but shall also include consideration of potential enhancement of existing landscape and visual quality. The Applicant will recommend mitigation measures to minimize the adverse effects identified above, including provision of a landscape design.	10.6 - 10.7
3.4.4.7	The mitigation measures include the design of structure, provision of finishes to structure, colour scheme and texture of material used and any measures to mitigate the impact on the existing and planned land use. Parties shall be identified for the on going management and maintenance of the proposed mitigation works to ensure their effectiveness throughout the operation phase of the Project.	10.6 - 10.7
3.4.4.8	Annotated illustration materials such as colour perspective drawing, plans and section/elevation diagrams, annotated oblique aerial photographs, photographs taken at vantage points, and computer-generated photomontage shall be adopted to illustrate the landscape and visual impacts of the proposed Project. In particular, the landscape and visual impacts of the Project with and without mitigation measures shall also be properly illustrated in existing and planned setting by computer-generated photomontage so as to demonstrate the effectiveness of the proposed mitigation measures. All computer graphics shall be compatible with Microstation DGN file format. The Applicant shall record the technical details in preparing the illustration, which may need to be submitted for verification of the accuracy of the illustration. Consideration should be given to views affecting the following, but not necessarily limited to, residents and tourists/visitors of Clear Water Bay Peninsular, High Island, and other nearby Islands.	10.6 - 10.7
3.4.5	Construction Waste Management Implications	3
3.4.5.1	Follow the criteria and guidelines as stated in Annexes 7 & 15 of the TM for evaluating and assessing water management implications arising from construction of the Project.	3.3
3.4.5.2 (i)	Analysis of activities and Waste Generation: identify the quantity, quality and timing of the waste and chemical waste	3.2 and 3.4

Brief Ref. #	Summary	EIA sections
	arising as a result of the construction activities of the Project and adopt design, general layout, construction methods and programme to minimize the generation of public fill/inert C&DM.	
3.4.5.2 (ii)	Proposal for Waste Management	3.4 - 3.6
3.4.5.2 (ii) (a)	For reducing waste generation, on-site or off-site re-use and recycling shall be evaluated. Measures which can be taken in the planning and design stages.	2 and 3.5
3.4.5.2 (ii) (b)	<p>The types and quantities of the wastes required to be disposed of as a consequence will be estimated and the disposal options for the wastes will be described in detail.</p> <p>The disposal options recommended for each type of wastes shall take into account the result of the assessment in item (c) below.</p> <p>The EIA report will also state clearly the transportation routings and the frequency of the trucks/vessels involved, any barging point or conveyor system to be used, the stockpiling areas and the disposal outlets for the wastes identified</p>	3.2 and 3.4 - 3.6
3.4.5.2 (ii) (c)	<p>The impact caused by handling (including stockpiling, labelling, packaging & storage), collection, transportation and disposal of wastes shall be addressed in detail and appropriate mitigation measures shall be proposed. This assessment shall cover the following areas:</p> <ul style="list-style-type: none"> • potential hazard; • air and odour emissions; • noise; and • wastewater discharge, • landscape and visual impacts, if any. 	3.4 - 3.6
3.4.6	Impact on Cultural Heritage	9
3.4.6.1	Follow the criteria and guidelines for evaluating and assessing the cultural heritage impacts as stated in Annexes 10 and 19 of the TM.	9.3
3.4.6.2	Available information will be reviewed to identify whether there is any possible existence of sites or objects of cultural heritage within any seabed that would be affected by the marine works of the Project	9.4 - 9.11
3.4.6.2	The information gathered will be used to avoid to the maximum practicable extent by modification of the layout and design of the Project	9.10 - 9.11