

# Coastal Works Review

**MM CB Ltd – Proposed Shoreline Modification and Excavation of an  
Access Channel and Flushing Inlets for an Inland Boat Marina and  
Swimming Lagoon.**

**CAYMAN BRAC**

**Block: 95B Parcels: 25, 26, 27, 211 & 212.**



**PREPARED FOR: MINISTRY OF FINANCIAL SERVICES, COMMERCE AND ENVIRONMENT**

April 2, 2014

Authored by: Technical Review Committee - Department of Environment

# Coastal Works Review

## MM CB Ltd – Proposed Shoreline Modification and Excavation of an Access Channel and Flushing Inlets for an Inland Boat Marina and Swimming Lagoon. CAYMAN BRAC Block: 95B Parcels: 25, 26, 27, 211 & 212.

### Project Proposal

As a condition of a recent Development Control Board planning approval for the creation of an inland marine basin, the applicant, MM CB Ltd, has submitted a Coastal Works Application for the creation of a boat channel and two flushing channels to provide navigable access and improved water quality to the proposed marina development.

The applicant has indicated that the **navigation access channel** will be created by widening and deepening an existing ironshore inlet. The work will require excavating offshore seabed resources to a distance of approximately 144ft by 30ft and to a depth of 11ft seaward to meet the 10 – 12ft contours, requiring the removal of approximately 773 cubic yards (5,499sqft or 0.1 acres) of near shore seabed communities. Additionally the **two flushing channels** will be excavated to a width of 5ft and a depth of 4ft seaward, requiring the removal of a combined 41 cubic yard (538sqft) of nearshore seabed communities.

The total excavation of all areas including the natural inlet and two smaller inlets combined is anticipated to result in the removal of approximately 814 cubic yards of marine resources and disturbance to 6037sqft of seabed.

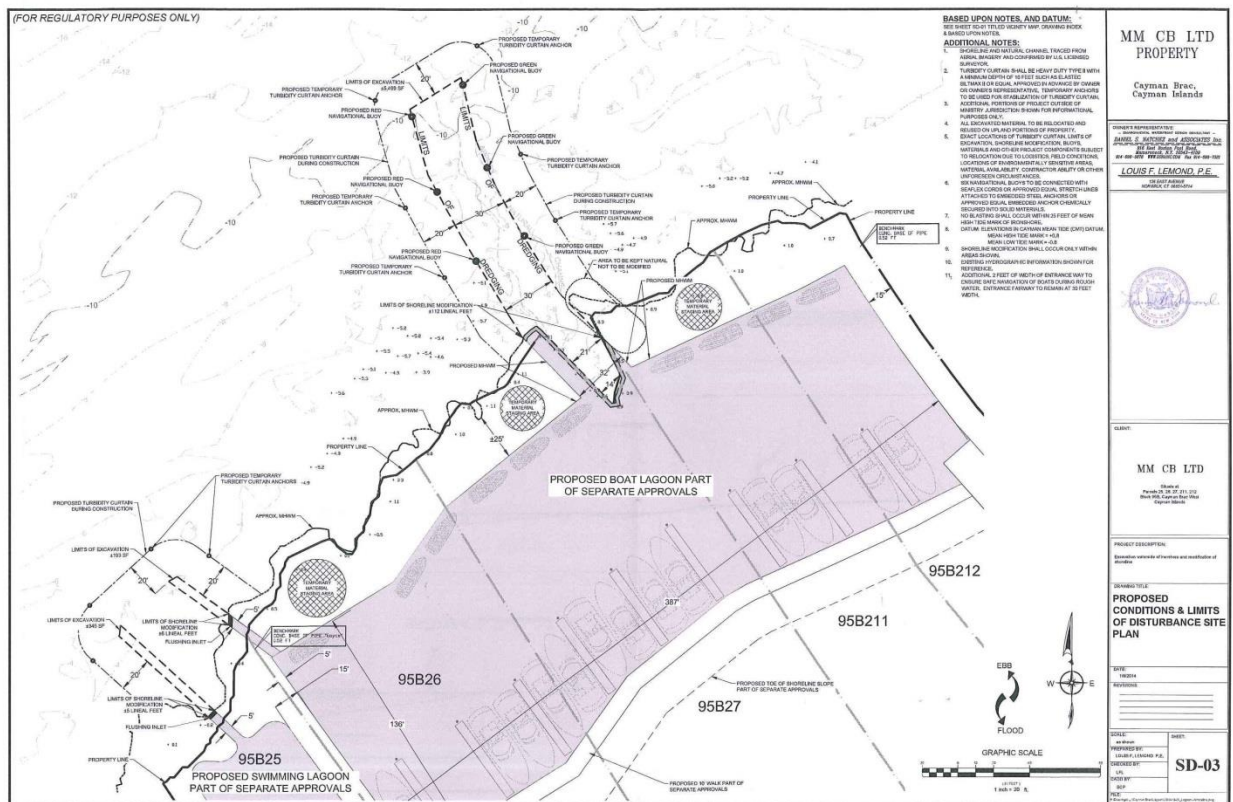


Figure 1: Proposed location of excavation and shoreline modification.

## Background

Previously the Department of Environment (DoE) had been requested by the Ministry of Environment (on behalf of Cabinet) to review three separate coastal works applications for the creation of marinas/boat berthing facilities in Cayman Brac. Whilst a synopsis of all three has been provided, as requested, the DoE still considers that based on international best practice the determination of these applications at this time is premature. On an Island as small as Cayman Brac, the siting of a marina/berthing facility should be the subject of a Strategic Assessment which would be framed within the context of a Development Plan for the Island. Such an Assessment would help identify the best potential site(s) for berthing and would identify sensitive or vulnerable sites where such development(s) should not be permitted. The objectives of the Assessment would include:

- Identifying the need and demand for berthing facilities e.g. type of facility (e.g. all-weather safe harbour); origin of vessels – local or visiting; visitation levels; tourism strategy for boating;
- Operational requirements such as: number of berths; size and draft of anticipated vessels; requirements for ancillary services such as fuelling, sewage pump out, water supply, launching ramps, boat storage, repair shop, rigging shop etc.;
- Selecting the most appropriate sites where such facilities could be established with the least environmental disturbance taking into account socio-economic factors, and
- Determining and assessing the likely environmental impacts and proposing measures to mitigate the negative impacts and maximize the benefits of such projects.

Ideally this would be formulated with the benefit of input from civil engineers, coastal engineers and environmental scientists. When considering options, the biophysical, economic and social costs and benefits throughout the whole life cycle of the proposal/facility should be considered. If such marina developments are not properly planned they will inevitably lead to the degradation of an already stressed natural environment, which will not only be detrimental to the country in general, but will jeopardize the tourism industry. The tourism industry in the Cayman Islands depends to a large extent on its coastal and marine resources. The environmental degradation of beaches, lagoons and coral reefs through ill-conceived and poorly-planned developments in Cayman Brac will have a profound negative impact on the number of tourist arrivals and the tourism product.

However, in the absence of an overarching strategic framework against which to assess these proposals, the DoE carried out a high-level analysis of the three applications based upon the information supplied by each applicant which was submitted to the Ministry of Environment. The following Coastal Works review deals specifically with the environmental considerations of the title referenced application and provides additional detail and recommendations.

## Environmental Impacts

- The proposal is **located within a Marine Park**.

Impacts associated with the proposal centre mainly on the requirement for offshore dredging to provide navigable access for larger boats and two smaller flushing channels. Impacts are likely anticipated from:

- **Direct loss of marine communities** including ironshore resources, coral colonies, gorgonians and other hard bottom species removed during the dredging operation.

- The proposed methodology for excavation of the channel is from a barge mounted excavator. The in situ dewatering of extracted material will result in the creation of **significant and detrimental sedimentation plumes that will be transported by local currents to surrounding reef resources and dive sites.**
- The applicant states that silt screens will be deployed to control sedimentation. The use of silt screens in some instances can mitigate the release of sediments in calm or sheltered inland waters. The Department is concerned that **prevailing wave and current patterns in the area will limit the ability of screens to control sediment release.**
- Silt screens and their placement can scour and abrade the seabed and the living resources over which they are situated if they are not placed carefully and anchored securely. Deep silt screens, as proposed in the application (skirt depth 10ft), present a greater risk.
- Barge mounted excavators require spuds and anchors deployed to the seabed to stabilize the barge against the forces generated by the excavation bucket. Spuds and anchors have the potential to cause significant impacts to the marine resources on which they are placed.
- The applicant has provided no supporting report derived from any geotechnical investigations to determine the rock hardness and feasibility of excavating the channel with a barge mounted mechanical excavator and/or requirement for blasting.
- The **requirement for occasional maintenance dredging** to keep the channel clear following storms and the deposition of rocks and rubbles will present an ongoing disturbance issue from mechanical clearing and sedimentation.

Longer term impacts include:

- Water quality issues in the marine basin (reduced circulation, bilge water and fuel pollution) that subsequently are released to the surrounding marine environment. The introduction of a Best Practice Management Plan to ensure good water quality is maintained will be essential.
- Increased boat traffic and associated impacts will expose surrounding marine resources to greater risk.

## Comments & Recommendations

The DoE's review of the associated planning application in December 2013 recommended amendments to the siting of the basin with a view to increasing the setback of the basin from the High Water Mark in order to minimize wave overtopping and increase the effectiveness of this as a safe harbour. These recommendations appear not to have been taken on board. We are therefore concerned that the potential benefits of this facility will not be maximized under the current design at the cost of significant impacts to the seabed i.e. Crown property, within a Marine Protected Area. We therefore recommend that if Cabinet is minded to approve this application, it should be contingent upon the applicant incorporating the recommendations of the DoE regarding the setback of the basin from the High Water Mark. For convenience, we have included below the DoE's recommendation:

*"The DOE is concerned that the current marina layout does not take advantage of the natural features of the site. In particular the facility appears to be set too close to the water such that the level of protection afforded by the naturally*

*occurring ironshore will be reduced. The DOE would recommend that the applicant consider moving the inland basin portion of the development further inland, behind the vegetation line shown in Figure 1. The vegetation line is a good indicator of recent wave impact and storm surge activity. The larger set back would ensure the marina fulfilled more of the requirements as a safe harbour during inclement weather. As currently proposed the facility would afford limited protection as rough seas will easily breach the narrow (25 ft.) and low ironshore breakwater rendering the marina inoperable. The recommendation to relocate the basin further inland may well require an alternative configuration for the marina”.*

Of the three marina applications currently under review the siting of this application on a relatively sheltered leeward coast and in close proximity to the predominant boating activity appears the most logical. The application would benefit considerably from an evidence based assessment for the need and economic viability of the proposal. The Department recommends that the Cabinet requests this additional information from the applicant in order to allow Cabinet to reach an informed decision regarding the economic and social merits of this application, balanced against the predicted environmental impacts.

If the Cabinet is prepared to consider the application for approval, the Department has outlined what its recommended licence fees (Royalty, Environmental Mitigation and Administration & Monitoring) would be in Appendix 1.

Please do not hesitate to contact the Department should you have any questions.

Timothy J. Austin  
Deputy Director, Research and Assessment  
For Director of Environment

## Appendix 1 – Draft Licence Conditions

### 1. Commencement and Duration

- 1.1 This Licence shall be **valid for one (1) year**.
- 1.2 The Works must be completed within **the three (3) month duration of the Permit**. The Licensee is required to provide, in writing, to the Grantor a request for an extension if the Works are not completed within the three (3) month duration but fall within the Term of the Licence.
- 1.3 The Licensee is required to re-apply for permission should he fail to commence within the twelve month duration of this Licence which is activated upon signing of this agreement by the Ministry of Environment (on behalf of the Cabinet) and the Licensee and agent and/or contractor on his behalf.

### 2. Licence Fees

2.1 **Royalty:** [REDACTED]  
[REDACTED]  
[REDACTED]

- [REDACTED]
- [REDACTED]

2.2 **Mitigation:** [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

- [REDACTED]

2.3 **Administration and Monitoring Fees:** [REDACTED]  
[REDACTED]  
[REDACTED]

- [REDACTED]
- [REDACTED]

[REDACTED]

[REDACTED]

### 3. Obligations of the Licensee

3.1 The Licensee covenants with the Grantor to undertake the following:

#### Satisfy Conditions Prior to Commencement of Works

3.2 Provide **written notification** to the Department of Environment (DoE) at P.O. Box 10202 GT, Grand Cayman **five (5) working days prior to commencement** of any coastal works for the purpose of activating the coastal permit process and inspection of the silt screen installation.

3.3 Obtain two (2) coastal permits from the DoE. **Work shall not commence without issuance of such permits.**

3.4 Display one coastal permit near the area of coastal construction and the other by the roadside. **Failure to display the permits at the site shall constitute a breach of the Licence, which will result in suspension of works and may incur penalties.**

3.5 **Install silt screens** around the Licensed Area, to the satisfaction of the DoE.

#### Observance of Conditions of Plans & Licensed Area

3.6 The Licensed Area within which all work must be carried out shall be the **3 excavation footprints totaling 6,037 ft<sup>2</sup>** as shown on the approved plans. Excavated material shall not exceed **814 cubic yards** and shall be placed on the shoreline. All machinery used during construction must operate within this area and in a manner that minimises environmental impact. Should post-construction inspection determine that impact has exceeded the Licensed Area, the Licensee and agent and/or contractor on his behalf may be held liable and may incur penalties.

3.7 All works shall be in strict accordance with plans stamped approved by the Ministry of Financial Services, Commerce and Environment and appended to this Coastal Works Licence. Any alteration from the Plans will be at the written consent of the Grantor, and any additional Royalty or licence fees deemed necessary will be paid prior to construction of any alterations. A copy of these plans shall remain on site with the construction crew for inspection purposes by DoE personnel for the duration of the Works.

#### Observance of Planning Regulations

3.8 The Licensee covenants to observe all planning requirements and all statutory provisions, regulations and orders made by any duly constituted Authority relating to or effecting this Licence and permission hereby granted and to produce to the Grantor forthwith any notices or other documents received pursuant to any such requirement, provision, regulation or code.

#### Carrying Out of Works

3.9 The Licensee agrees that in carrying out the Works that:

- a) Works shall consist of excavating up to **814 cubic yards** of material from the seabed and placing on the property's shoreline. Work shall be carried out only in the **3 excavation footprints totaling 6,037 ft<sup>2</sup>** as shown on the approved plans. Channel and excavation depths shall not exceed **11ft** in water depth.

- b) If any damage occurs to the marine environment as a result of a breach by the Licensee of any covenants on its behalf in this Licence, the Licensee shall covenant that it will remedy such damage to the reasonable satisfaction of the Department within such time as the Department may reasonably specify. If this is not done the Grantor may remedy the damage and recover the costs from the Licensee.
- c) Turbidity resulting from construction shall be mitigated through the installation of silt screens with **4-ft minimum skirt depth** and of sufficient length to fully enclose the work area. **Work shall not commence without such screens securely anchored.** Screens must be maintained to the satisfaction of the DoE and remain in place throughout the construction until the water contained in the screen has cleared to the same appearance as the water immediately outside of the screen.

### Notice to Cease Work

- 3.10 The Licensee and agent and/or contractor on his behalf will comply with verbal or written requests by the DoE regarding means of reducing environmental impact. The Licensee and agent and/or contractor on his behalf shall also comply with verbal or written notification by the DoE for immediate cessation of work if the work is causing an unacceptable environmental impact due to unsatisfactory screen maintenance or other reason determined by the DoE. Operations shall resume at the authorisation of the DoE once corrections to work methods to safeguard against further environmental degradation have been made in accordance with DoE specifications.

### Inspection of Works

- 3.11 The DoE shall be afforded reasonable access to the site, both offshore and inland, for the purpose of monitoring the Works.

### Protection of the Environment

- 3.12 The Licensee shall ensure that all works are to be carried out to the satisfaction of the DoE in such a way as not to cause any damage or injury to any property, land or person (including Government property or land not authorised in this licence). In the event of any such damage or injury, the Licensee shall pay fair and proper compensation and indemnify the Government against any resulting claims, costs or other proceedings.
- 3.13 If any damage occurs to the marine environment as a result of a breach by the Licensee of any covenants on its behalf in this Licence, the Licensee shall covenant that it will remedy such damage to the reasonable satisfaction of the DoE within such time as the DoE may reasonably specify. If this is not done the Grantor may remedy the damage and recover the costs from the Licensee.

### Stockpiled Material

- 3.14 The Licensee shall suitably contain or store stockpiled materials associated with the Works in locations away from the water's edge so as not to cause problems with leaching of sediments as a result of run-off from wave activity, rain and drainage.



### **Return of Coastal Permit**

3.15 The Licensee shall upon completion of Works, return one (1) of the permits to the Department, after which a post-construction inspection will be performed by the Department to verify compliance with Licence conditions.

### **Assignment**

3.16 This Licence is personal to the Licensee and is not transferrable.

### **Liability**

3.17 To remedy damage or pay compensation, all Works shall be carried out in such a way as not to cause any damage or injury to any property, land or person (including Government property or land not authorised in this Licence).

3.18 In the event of any such damage or injury to a third party, the Licensee agrees to indemnify the Grantor in respect of any third party claim, loss or damage, settlement, legal cost and expenses against the Grantor which may be paid to such third party as a result of any matter relating to this License or use of Licensed Area.

### **Cabinet Policy**

3.19 Changes in the Cayman Islands Government Cabinet Policy on Coastal Works Licences may apply to this Licence.

## **4. Termination of Licence**

4.1 The Grantor may terminate this License immediately by notice in writing to the Licensee if:

- (a) any payment of the whole or part of the Licence fee shall remain unpaid for thirty (30) days upon the grant of the License;
- (b) there is non-observance or non-performance of any of the covenants or conditions on the Licensee's part contained in this Licence;
- (c) there is failure to conduct the Works in accordance with Plans or covenants set in this Licence, or
- (d) there is a breach of any condition of this License.

4.2 In whatever manner this Licence or permission to use the Licensed Area shall determine such determination shall be without prejudice to the right of the Grantor to recover from the Licensee any sum or sums then remaining due under this Licence and also without prejudice to and so as to not in any manner affect any liability hereunder on the part of the Licensee which may then be subsisting or have accrued.

4.3 Failure to conduct works in accordance with approved drawings or conditions set in this Licence may be construed as a breach of the Licence and/or a violation of the Marine Conservation Law and may incur penalties and/or cause the Grantor to terminate the Licence.