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DOCUMENT CONTROL SHEET

Project Name:	Dredging, reclamation and shore protection for Rasmale' sites A, B, H, I & K
Document Name:	Independent Evaluation of Work Done and Claims Assessment for Dredging, Reclamation, and Shore Protection Project in Fushidhiggaru lagoon (Rasmale')
Issued To:	Housing Development Corporation Ltd.
Issued By:	Epoch Associates Pvt. Ltd.
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Contract ref. No:	HDC(161)-PMD/CNTR/2024/11

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1. Introduction

1.1. Project Details

Project title:	Dredging, reclamation and shore protection for Rasmale' sites A, B, H, I & K
Contract no:	HDC(161)-PMD/CNTR/2024/11
Employer:	Housing Development Corporation Ltd.
Employer's Representative:	Project Management and Development Department, Housing Development Corporation Ltd.
Contractor:	CRCC Harbour & Channel Engineering Bureau Group Co., Ltd.
Type of Contract:	Conditions of contract for EPC/ Turnkey Projects, Second Edition 2017, along with amendments 1, 2 & 3 thereto issued in years 2018, 2019, 2022 respectively, published by the International Federation of Consulting Engineers (FIDIC)
Contract signing date:	29th July 2024
Date of site takeover by Employer:	28th July 2025

1.2. General requirements

- a) The Government of Maldives decided to further increase the land area by reclaiming Fushidhiggaru lagoon as Rasmale' for the purpose of providing more opportunities for housing, commercial and industrial usage with an aim to be climate and disaster resilient and function as a self-sufficient urban settlement.
- b) The project included the following works:
 - i. Study, design and survey
 - ii. Dredging, Reclamation
 - iii. Shore protection

1.3. Site allocation

The area for the works allocated to the Contractor consisted of sites A, B, H, I, K and channels A1, A2 and B of the Fushidhiggaru lagoon as indicated in Figure 1. Total area to be reclaimed by the Contractor amounts to 352 Ha.

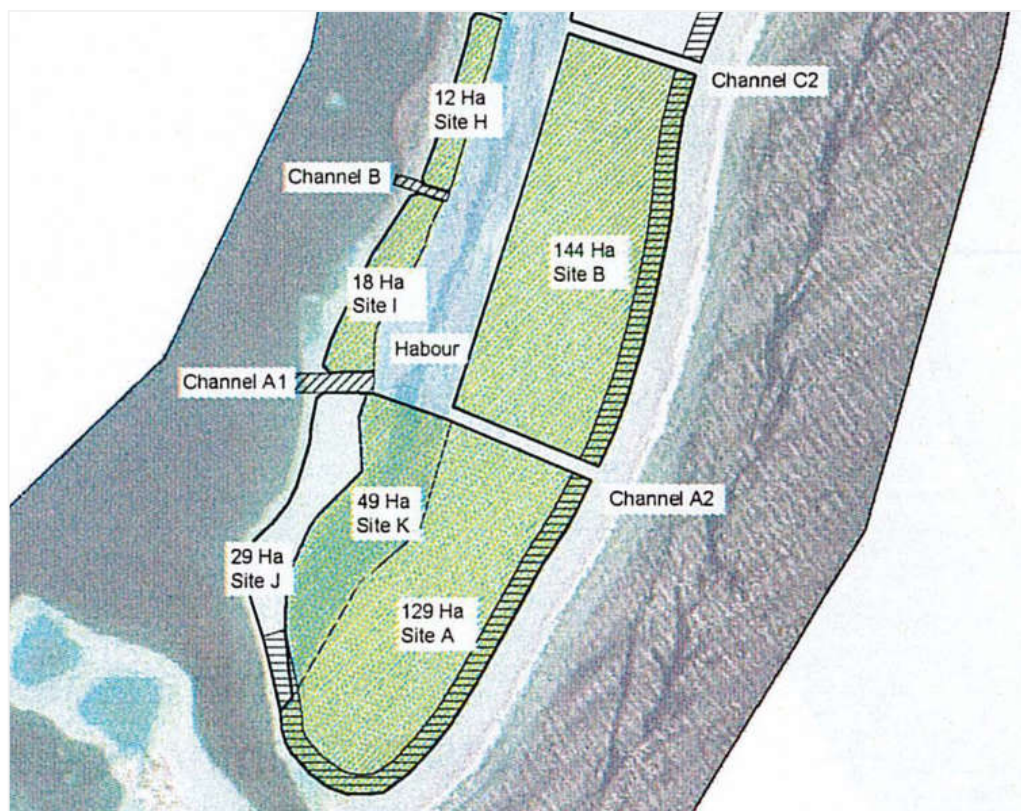


Figure 1: Location map (extract from Annex A of the Employer's Requirements)

1.4. Project scope

The description of the works for the Contract is as outlined below:

Section 1: Feasibility Study, Surveys, Design, EIA compliance (coral relocation and bund wall) prior to commencement of dredging and reclamation works for Sites A,B,H,I & K and channel A1, A2 & B. After completion of the above said works, dredging and reclamation works will carry out which to be determined by the design, work plans and the advance payment availability.
Section 2: Dredging and Reclamation Works for Sites A,B,H,I & K and channel A1, A2 & B.
Section 3: Shore protection works for Sites A, B, H, I & K and channel A1, A2 & B

Figure 2: Project description (Extract from the PCC)

1.5. Proposed program

540 days calendar days (18 months)

3	Proposed Reclamation Duration	6 months (actual working months)
4	Proposed Shore Protection Duration	12 months (actual working months)
5	Total Project Duration	18 months (actual working months)

Figure 3: Contractor's program (Extract from Contractor's Proposal)

1.6. Review methodology/ limitations

1.6.1. Methodology

- Contractual review
- Review claimable items under the signed BoQ breakdown and Payment Schedule
- Review of Contractor's claims and reasonings submitted
- Review of relevant documentation provided for the project
- Establishing Consultant's determination with rationale

1.6.2. Limitations

- Review was limited to the documents provided by the Employer
 - It is noted that there were some missing appendices to documents such as progress reports which were ignored in the interest of timely delivery
 - It is noted that there were some missing data such as those required for the quantification of silt screen, bund wall, coral relocation which were estimated based on available documentation
- Review was limited to reasonable overview based on the time constraints
- Due consideration was given for completion of works based on the Employer's acceptance of Works
- Signed Payment schedule and BoQ breakdown were given precedence over Consultant's views on reasonable allocations for claimed items

2. Document review and analysis

2.1. Summary of contractor's progress claims

#	Description	BoQ Total (USD)	Claimed Total (USD)	% of BoQ Claimed
1	Other costs of production			
1.1	Provide feasibility study reports for the project	445,443.00	445,443.00	100%
1.2	Geophysical survey and geotechnical investigation.	1,298,910.00	1,298,910.00	100%
1.3	This includes the hiring of an independent survey engineer, initial topographic surveys and preparation of survey reports during construction.	901,697.00	541,000.17	60%
1.4	Design inception, initial design and detail design report.	5,777,718.00	381,329.39	7%
1.5	Provide all risk insurance, third party liability insurance and group personal accident insurance and expatriate medical insurance.	1,670,195.00	217,125.35	13%
1.6	Appointment of environmental consulting agent, preparation of environmental management plans, environmental monitoring and surveys.	800,000.00	133,320.00	17%
1.7	Mobilization and demobilization of Contractor personnel, materials and marine machinery and equipment.	15,000,000.00	2,251,600.00	15%
1.8	Set up office and living facilities on site, including providing the employer with necessary office and living facilities and transportation as required by the contract.	1,327,943.00	690,530.36	52%
1.9	Mixing plant, component prefabrication plant, steel processing plant, warehouse, machine repair workshop, etc.	926,066.00	-	0%
1.10	Set up berthing facilities according to the needs of the site to meet the requirements of personnel exchanges, material supply, machinery and equipment in and out of the site, etc.	521,528.00	260,764.00	50%
Total		28,669,500.00	6,220,022.27	22%
2	Dredging and Reclamation works			
2.1	Coral harvesting, conservation, transportation, preparation of transplanted areas, coral fixation and monitoring and testing.	2,992,000.00	2,692,800.00	90%
2.2	In survey, excavation, transportation, backfilling, compaction, slope management and out of survey.	4,138,500.00	510,949.56	12%
2.3	In survey, excavation of sand sources, transportation, backfilling, compaction, slope management and settlement of observation, out of survey and testing.	171,661,000.00	0	0%
2.4	Fuel consumption of marine machinery equipment used in dredging and reclamation works.	21,480,000.00	0	0%
2.5	Reclamation cost increase per 5NM per CBM if borrow area exceeds 15NM.	0	0	0%
Total		200,271,500.00	3,203,749.56	2%
3	Shore Protection works	23,936,000.00	0	0%
4	Provisional sum	12,643,850.00	0	0%
Total		265,520,850.00	9,423,771.83	4%

Figure 4: Summarized table of Contractor's claims (With reference to Contractor's IPA001 updated on 06 Dec 2025)

2.2. Review of Contractor's claims

For ease of reference and clarity, all items under this section have been referenced based on the signed payment schedule. The relevant reference numbers as per the signed BoQ breakdown are also here provided.

2.2.1. Item #4: Feasibility studies (BoQ item no. 1.1.)

#	Description	BoQ Val. (USD)	Claimed Val. (USD)	Assessed Val. (USD)	Assessed % Completed
Milestone: Preliminaries (section 1)					
4	Provide feasibility study reports for the project	445,443.00	445,443.00	111,360.75	25%
Total		445,443.00	445,443.00	111,360.75	25%

Notwithstanding CRCC's comments that the feasibility report was limited by information not provided by HDC, it is noted that the **obligation of CRCC under the Contract was not met**. Specifically, there is a *lack of coverage on risk elements* and *cost of infrastructure* required to evaluate the project feasibility. Additionally, the *risk of cost escalation associated with the unavailability of sufficient fill material* within 15 nautical miles was not addressed.

From a pure **compliance perspective** of delivering the report for a specific objective as acknowledged by CRCC in their correspondence with HDC (i.e., for the purpose **of enabling financing**) we feel that the Employer may even be justified for rejecting the claim for this component entirely. However, as there appears to be some shortfall in the obligations by HDC to provide relevant information, it is felt that acceptance of works up to a maximum of **25%** of the allocated value under the payment schedule is reasonable.

It is noted that although HDC had highlighted to the Contractor at one point that the feasibility report was only required for design purposes, we do not agree with this assertion.

2.2.2. Item #6: Geophysical and geotechnical survey/investigation (BoQ item no. 1.2.)

#	Description	BoQ Val. (USD)	Claimed Val. (USD)	Assessed Val. (USD)	Assessed % Completed
Milestone: Preliminaries (section 1)					
6	Geophysical survey and geotechnical investigation	1,298,910.00	1,298,910.00	592,000.00	46%
Total		1,298,910.00	1,298,910.00	592,000.00	46%

Based on the information provided, it appears that **no geophysical survey was completed**.

This item is specifically included in the *BoQ breakdown, Payment Schedule* and the *main Contract requirements* (Clause 07 of the RFP). It is also very clear in the initial cost breakdown, that **a distinct geophysical was required** by virtue of the large sum of *USD 1.299m* allocated for this line item.

In addition, some of the **minimum test requirements** instructed under the ER were **not carried out**. This includes the *SPC test, MID test, Plate bearing test, and Sand replacement test*. HDC had also provided an additional *reminder* regarding the required tests on *8th May 2025* in response to the Contractor's method statement on *27th April 2025*.

An order of magnitude calculation was carried out to establish the amounts fairly due to the Contractor for works completed. This came to a conservative estimate of **USD 592,000**.

Note:

Calculations for 60 boreholes with SPT came to the order of USD 420,000 conservatively (roughly USD 7000/ea. for offshore boreholes based on industry standards) and was supplemented by estimates for mobilization, lab testing, etc. as detailed in the geotechnical report.

2.2.3. Item #7.8: Appointment of surveyor and carrying out of topographic surveys (BoQ item no. 1.3.)

#	Description	BoQ Val. (USD)	Claimed Val. (USD)	Assessed Val. (USD)	Assessed % Completed
Milestone: Preliminaries (section 1)					
7	Appointment of an independent surveyor.	541,018.20	180,321.37	180,321.37	33%
8	Initial topographic surveys and preparation of survey reports.	360,678.80	360,678.80	360,678.80	100%
Total		901,697.00	541,000.17	541,000.17	60%

As per the signed **Payment schedule, completion** is established **60%** of total value of works for the item (i.e. 33% completion for *item #7* and 100% completion for *item #8*, i.e. the bathymetry survey)

However, it is noted that the breakdown in the Payment Schedule provides an excessive amount for the bathymetry per our evaluation. I.e., if we establish the rate at a *maximum of 0.5USD/l.m.* (based on industry standards) for approximately 470km (as per the *control survey report*), the *total value* amounts to approximately *USD 235,000* for the bathymetry.

2.2.4. Item #13, 14, 15: Design (BoQ item no. 1.4)

#	Description	BoQ Val. (USD)	Claimed Val. (USD)	Assessed Val. (USD)	Assessed % Completed
Milestone: Preliminaries (section 1)					
13	Inception design	1,155,543.60	381,329.39	0	0%
	i. Synthesis of background information, literature review				
	ii. Bathymetry and survey				
	iii. Framework for methodologies and consultation plan with schedule				
14	Initial design	2,311,087.20	0	0	0%
15	Detailed design	2,311,087.20	0	0	0%
Total		5,777,718.00	381,329.39	0	0%

The Contractor had submitted two main arguments for their claim under this item:

- They had submitted 1 of 3 deliverables under 1.4 (bathymetry) on 4th May 2025. It is noted that the Contractor's argument for the survey requirements (1.3) was also mainly hinged on this deliverable. While we have noted the higher-than-expected cost of this in #1.3, we have allowed that claim and hence the Contractor cannot claim for the same deliverable under this as no additional detailed bathymetry works were carried out.
- The Contractor contends that they ceased the design work (inception report) when the client notified them of possible novation to an alternate project, and that they had incurred costs for the works done in the interim. This decision to cease the design work appears to be a unilateral decision by the Contractor as no formal communication to cease the design works was issued from HDC that we are aware of. Furthermore, since there was no final deliverable and no substantiation of the actual costs incurred in their *Detailed report for IPC 01*, it is difficult to allocate any amount under this item.

2.2.5. Item #12: Insurance (BoQ item no. 1.5)

#	Description	BoQ Val. (USD)	Claimed Val. (USD)	Assessed Val. (USD)	Assessed % Completed
Milestone: Preliminaries (section 1)					
12	Provide all risk insurance, third party liability insurance and group personal accident insurance and expatriate medical insurance.	1,670,195.00	217,125.35	22,746.47	1%
Total		1,670,195.00	217,125.35	22,746.47	1%

Contractor had claimed for 60% and 40% completion for Personal Accident Insurance and Employer's Liability Insurance respectively, considering the duration for which the personnel deployed were employed. It is noted that this did not account for that only 11 out of 105 personnel (the anticipated total manpower listed in their method statements and submissions for layouts of temporary facilities) had been deployed. This value was therefore accordingly reduced to account for this remission.

2.2.6. Item #21-28: Environmental consultation, management plan, monitoring and surveys (BoQ item no. 1.6)

#	Description	BoQ Val. (USD)	Claimed Val. (USD)	Assessed Val. (USD)	Assessed % Completed
Milestone: Environmental Monitoring & Surveyors (sections 1,2,3)					
21	Engage an environmental consultancy	320,000.00	133,320.00	133,320.00	33%
22	Approval of the Environmental Management Plan	80,000.00			
23-28	EIA monitoring (construction phase, post-construction)	400,000.00	0	0	0%
Total		800,000.00	133,320.00	133,320.00	17%

Contractor's argument that the engagement of EMP consultant entitles them to the full amount for *item #21* of payment schedule is not valid as this engagement should be distributed over the full period of the works of 18 months.

With the Contractor contending that the engagement was formalized on 20th March, (despite the date of the EMP being stated as February 2025) and the last monthly progress report being submitted for August 2026, the total entitlement is deemed to be 5/18 of the total allocated value for this item of USD 400,000. This equates to roughly USD 111,111.11. As there is no evidence of any engagement by the EMP consultant by virtue of submission of any monitoring reports after the initial EMP, assuming this as the ceiling amount is not unreasonable.

Notwithstanding the above, review of the *Service Contract* fees reveals a total of 17% allocated for the outputs under this item. This is roughly equivalent to USD 136,000. Therefore, it is concluded that the Contractor does have some merit in their claimed value of USD 133,320.

2.2.7. Item #1-3, 29-31: Mobilization and demobilization (BoQ item no. 1.7)

#	Description	BoQ Val. (USD)	Claimed Val. (USD)	Assessed Val. (USD)	Assessed % Completed
Milestone: Mobilization, demobilization (section 1,2,3)					
1	Mobilization of Contractor's personnel, machinery and equipment for section 1	2,000,000.00	1,666,600.00	1,666,600.00	83%
2	Mobilization of Contractor's personnel, machinery and equipment for section 1&2	7,500,000.00	0	0	0
3	Mobilization of Contractor's personnel, machinery and equipment for section 3	500,000.00	0	0	0
29	Demobilization of Contractor personnel, materials, marine machinery and equipment for Section 1	650,000.00	585,000.00	487,480.50	75%
30	Demobilization of Contractor personnel, materials, marine machinery and equipment for Section 2	2,850,000.00	0	0	0
31	Demobilization of Contractor personnel, materials, marine machinery and equipment for Section 3	1,500,000.00	0	0	0
Total		15,000,000.00	2,251,600.00	2,154,080.50	14%

Contractor's claim that 83% of *item #1* (of the *Payment Schedule*), i.e. mobilization for Section 1, is accepted. Contractor's submission that 90% completion of demobilization for the works mobilized as per *item #29* of the *Payment schedule* is accepted as well.

However, demobilization is necessarily derived as a percentage of the items mobilized as opposed to a blanket percentage applied to *item #29* of the *Payment Schedule*, i.e. $90\% \times (83\% \times \text{item \#29})$.

It is noted that the true extent of demobilization is to be confirmed by HDC as we understand the site may still be used by the Contractor pending confirmation of the settlement agreement (*ref. letter no. HDC(161-CPT/MIS/2025/1572)*)

2.2.8. Item #9: Temporary office and living area (BoQ item no. 1.8)

#	Description	BoQ Val. (USD)	Claimed Val. (USD)	Assessed Val. (USD)	Assessed % Completed
Milestone: Preliminaries (section 1)					
9	Set up office and living facilities on site	1,327,943.00	690,530.36	316,176.90	24%
Total		1,327,943.00	690,530.36	316,176.90	24%

Contractor's progress was compared against their method statement for deployment of temporary office and living facilities. As facilities suitable for 25 persons out of a total of 105 to be deployed were established, the completion percentage for this item was adjusted accordingly.

2.2.9. Item #10: Temporary jetty (BoQ item no. 1.10)

#	Description	BoQ Val. (USD)	Claimed Val. (USD)	Assessed Val. (USD)	Assessed % Completed
Milestone: Preliminaries (section 1)					
10	Set up berthing facilities for personnel exchange, material supply, machinery and equipment transportation etc.	521,528.00	260,764.00	80,020.71	15%
Total		521,528.00	260,764.00	80,020.71	15%

The design for the temporary jetty proposed by the Contractor (which appears to be more reasonable with regards to the works to be undertaken), includes shore protection/revetment on all sides of the jetty and a reclaimed area for landing. Using a costing of 550 USD/l.m. for typical jumbo bag shore protection and a reclamation cost of 10.79 USD/m³ as derived from the Contract, a cost ratio for the two elements of approximately 63:37 (i.e. of shoring to

reclamation) was used to assess the work the Contractor claims to have been done for the temporary jetty. I.e., for the approximate length of 30m of shore protection which was carried out.

Although the Contractor is now claiming for the speed landing to be the temporary berthing facility, it is noted that they had not submitted a proposal to change the design for the temporary jetty from the initial submission that we could determine from the documents provided. Thus, it seems that the Contractor themselves did not consider this to be the temporary jetty mentioned in the Contract.

The Contractor in their progress report for the month of *June 2025* conceded that even this area was only created for speed boat landing. Therefore, an argument could be made to reduce the amount further by rationalizing that no work was done for the temporary berthing requirement as outlined under the Contract. As such, it is felt that this is the maximum due to the Contractor for the works completed for this item, after all possible concessions.



Figure 5: Extract from Contractor's progress report for the month of June 2025

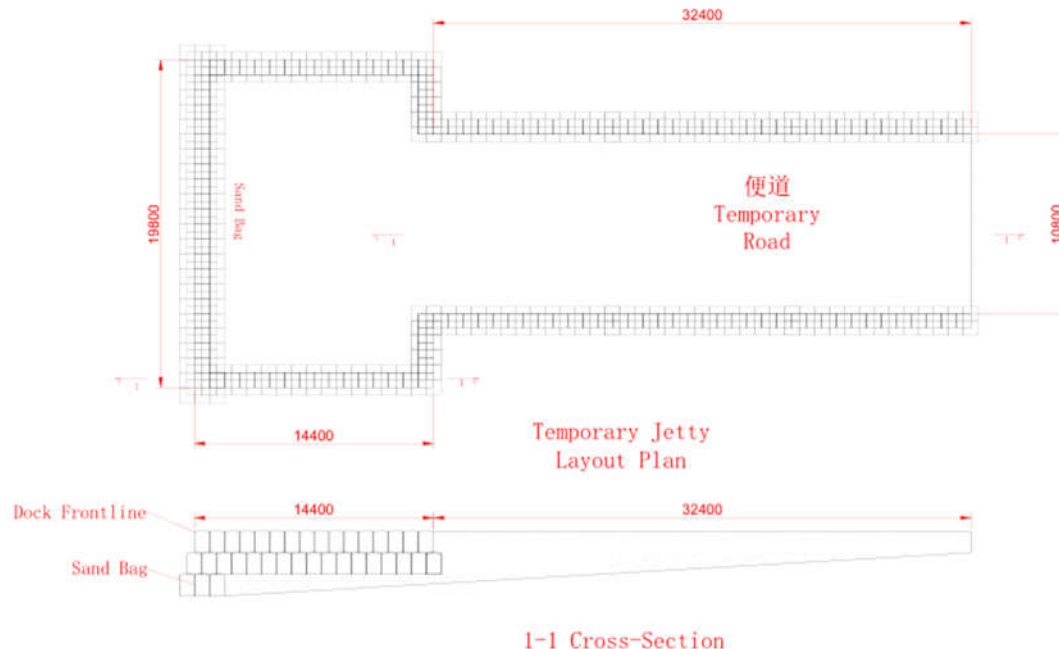


Figure 6: Extract from Contractor's submission for temporary jetty layout

2.2.11. Item #5: Coral relocation (BoQ item no. 2.1)

#	Description	BoQ Val. (USD)	Claimed Val. (USD)	Assessed Val. (USD)	Assessed % Completed
Milestone: Preliminaries (section 1)					
5	Coral harvesting, conservation, transportation, preparation of transplanted areas, coral fixation and monitoring	2,992,000.00	2,692,800.00	2,692,800.00	90%
Total		2,992,000.00	2,692,800.00	2,692,800.00	90%

Although this is a high value item, the actual area that was transplanted has not been documented quantitatively and it is thus considered a major limitation in the relevant report. Thus, we are unable to assess the value of works done based on this parameter any further. However, we do note that monitoring work has not been done, and that a deduction of 10% for monitoring may be accepted for this purpose.

It is additionally noted that given the high value of this item, it may be worthwhile getting the coral relocation contractor to submit the actual area of transplantation carried out if possible.

2.2.12. Item #16,17: Bund wall (BoQ item no. 2.2)

#	Description	BoQ Val. (USD)	Claimed Val. (USD)	Assessed Val. (USD)	Assessed % Completed
Milestone: Preliminaries (section 1)					
16	The bund wall in area A includes excavating, transportation, backfilling, compaction and slope management	1,002,900.00	510,949.56	132,991.96	3%
17	The bund wall in area K, B, H & I includes excavating, transportation, backfilling, compaction and slope management	3,135,600.00			
Total		4,138,500.00	510,949.56	132,991.96	3%

Contractor has asserted that silt screen constitutes 5% of the price for this item, that they have carried out 10% of the silt screen installation requirement and 100% of the silt screen procurement. While we accept the Contractor's submission regarding silt screen installation as well as the percentage allocation for this item, the claim for procurement is not accepted as there is no evidence of materials procured being onsite and no substantiation of delivery to site has been provided. It is noted that the agreement between the supplier and the Contractor is not sufficient for release of payment for materials.

It is noted that the Contractor's submission that 7.5% of the item's value is for completion of shop drawings of the bund wall is too high, and this has accordingly been reduced to 1%.

The remaining 94% (i.e. 100%-1%-5%) is deemed as fair allocation for the bund wall itself. We accept the Contractor's claim that 276m for this work has been completed. This constitutes 1.82% of the total quantity of sand bund required. i.e. $(276 \times 23.56) / 356,712.19$ as per the measurements provided in the Contractor's method statement.

3.2. Temporary Sand Bund

3.2.1. Construction section division

- Sand bund construction shall be divided into sections according to Table 3-1.

Table 3-1 List of quantities of sand bund

No.	Area	Length (m)	Estimated height (m)	Cross-sectional area (m ²)	Quantity of projects (m ³)
1	I	2290	2.96	23.56	54694.85
2	H	2019	3.28	27.16	54951.53
3	K	443	8.07	105.47	46701.84
4	A (A1)	2596	2.5	18.75	48675
5	A (A2)	747	3.0	24.00	17928
6	B	5327	3.1	25.11	133760.97
Total		13422			356712.19

Figure 7: Extract from Contractor's method statement for Reclamation

2.3. Summary of assessed claims

#	Description	BoQ Total (USD)	Claimed (USD)	%	Assessed (USD)	%
1	Other costs of production					
1.1	Provide feasibility study reports for the project	445,443.00	445,443.00	100%	111,360.75	25%
1.2	Geophysical survey and geotechnical investigation.	1,298,910.00	1,298,910.00	100%	592,000.00	46%
1.3	This includes the hiring of an independent survey engineer, initial topographic surveys and preparation of survey reports during construction.	901,697.00	541,000.17	60%	541,000.17	60%
1.4	Design inception, initial design and detail design report.	5,777,718.00	381,329.39	7%	0.00	0%
1.5	Provide all risk insurance, third party liability insurance and group personal accident insurance and expatriate medical insurance.	1,670,195.00	217,125.35	13%	22,746.47	1%
1.6	Appointment of environmental consulting agent, preparation of environmental management plans, environmental monitoring and surveys.	800,000.00	133,320.00	17%	133,320.00	17%
1.7	Mobilization and demobilization of Contractor personnel, materials and marine machinery and equipment.	15,000,000.00	2,251,600.00	15%	2,154,080.50	14%
1.8	Set up office and living facilities on site, including providing the employer with necessary office and living facilities and transportation as required by the contract.	1,327,943.00	690,530.36	52%	316,176.90	24%
1.9	Mixing plant, component prefabrication plant, steel processing plant, warehouse, machine repair workshop, etc.	926,066.00	-	0%	0.00	0%
1.10	Set up berthing facilities according to the needs of the site to meet the requirements of personnel exchanges, material supply, machinery and equipment in and out of the site, etc.	521,528.00	260,764.00	50%	80,020.71	15%
Total		28,669,500.00	6,220,022.27	22%	3,950,705.50	14%
2	Dredging and Reclamation works					
2.1	Coral harvesting, conservation, transportation, preparation of transplanted areas, coral fixation and monitoring and testing.	2,992,000.00	2,692,800.00	90%	2,692,800.00	90%
2.2	In survey, excavation, transportation, backfilling, compaction, slope management and out of survey.	4,138,500.00	510,949.56	12%	132,991.96	3%
2.3	In survey, excavation of sand sources, transportation, backfilling, compaction, slope management and settlement of observation, out of survey and testing.	171,661,000.00	0.00	0%	0.00	0%
2.4	Fuel consumption of marine machinery equipment used in dredging and reclamation works.	21,480,000.00	0.00	0%	0.00	0%
2.5	Reclamation cost increase per 5NM per CBM if borrow area exceeds 15NM.	0.00	0.00	0%	0.00	0%
Total		200,271,500.00	3,203,749.56	2%	2,825,791.96	1%
3	Shore Protection works	23,936,000.00	0.00	0%	0.00	0%
4	Provisional sum	12,643,850.00	0.00	0%	0.00	0%
Total		265,520,850.00	9,423,771.83	4%	6,776,497.46	3%

Figure 8: Summary of assessed claims

3. Conclusion and recommendations

3.1. Contractor's claims

The final tally of amounts due to the Contractor for works completed stands at USD 6,776,497.46 which amounts to 3% of the total Contract. We would note that although the Contractor had claimed this as IPA, the Contractual conditions for the formal submission of IPA has not been met (*i.e. signing of the Financial Agreement as per Cl. 14.3 of the PCC – Part B*).

Notwithstanding the same, it is evident that the amounts due to the Contractor should be compensated for works completed. As the Contract is being closed through mutual closure as opposed to a termination, we suggest that this settlement be addressed in an Addendum to the Contract outlining the terms of Contract closure.

It is here noted that there are three main items which may affect this value if additional data can be obtained. These are:

- a) *BoQ item 2.1. Coral relocation* regarding quantification of coral relocation,
- b) *BoQ Item 1.10. Bund wall* regarding verification and handover of silt screen purchases and
- c) *BoQ Item 1.7 Mobilization and demobilization* regarding the outstanding 10% due to the Contractor for demobilization upon complete demobilization

3.2. Determination of tangible work completed by the Contractor

The quantity of tangible work completed by the Contractor that can be utilized by the other parties for the remainder of the project is listed below. This is with reference to the estimates and rationale outlined above in *Section 2* of this report.

#	BoQ item	Description	Value of tangible works (USD)
1	Other costs of production		
1.1	Provide feasibility study reports for the project	Due to the limitations in the feasibility study, our opinion is that it is not sufficient for procurement of project finance and that the report provides only minimal useful data as a basis for future studies. It is noted that any new party that may be assigned to do the Works will have to carry out a full feasibility study. As such, we believe that there is virtually no value of tangible works carried out by this Contractor for this element that can be utilized by other Parties. It is additionally noted that this issue will be complicated further given the advanced stage of reclamation carried out by the party currently allocated the works.	0
1.2	Geophysical survey and geotechnical investigation.	The geotechnical investigation has been regarded as completed with the exception of pending tests, as highlighted in the report. This may be used as base data in conjunction with additional tests required after the completion of reclamation. Notably, post construction tests on the reclaimed fill would be required and this has not been covered in this estimate. As the current stage of the reclamation is significantly advanced and given that there are multiple parties involved in the ongoing reclamation works, there may not be much value for any new parties to undertake the geophysical survey which was required under the original Contract.	520,000.00

1.3	This includes the hiring of an independent survey engineer, initial topographic surveys and preparation of survey reports during construction.	With respect to the hiring of the surveyor, we do not believe that there is any tangible benefit that will be carried over from the Contractor to any new parties that are assigned the works. Similarly, the original bathymetry carried out by the Contractor has limited value to any parties coming into the project, as they would need to establish their own baseline topographic survey (i.e. in-survey) prior to starting the works. As such, the maximum value that can be derived as a tangible benefit would be capped at the value of bathymetry carried out, while the actual tangible benefit that can be realized would depend on the current progress of ongoing works being carried out by other parties.	235,000.00
1.5	Provide all risk insurance, third party liability insurance and group personal accident insurance and expatriate medical insurance.	There is no tangible benefit of this item that can be carried over to other parties assigned the works.	0
1.6	Appointment of environmental consulting agent, preparation of environmental management plans, environmental monitoring and surveys.	There is no tangible benefit of the engagement of the environmental consultant that can be carried over to other parties assigned the works. There is a tangible benefit to the value of the Environment Management Plan and supplementary reports provided. We have assigned this a value based on market rates as we feel that the rates provided in the payment schedule are overstated. The Construction stage and post-construction stage monitoring were not carried out and have therefore no bearing on this item's valuation in this regard.	Up to 50,000
1.7	Mobilization and demobilization of Contractor personnel, materials and marine machinery and equipment.	As it is assumed that the Contractor will demobilize all mobilized Works as required under the Contract, there is no tangible benefit of this item that will be carried over to other parties assigned the works.	0
1.8	Set up office and living facilities on site, including providing the employer with necessary office and living facilities and transportation as required by the contract.	As it is assumed that the Contractor will demobilize all temporary facilities setup for the Works as required under the Contract, there is no tangible benefit of this item that will be carried over to other parties assigned the works. Any use of these facilities by the new parties assigned the Works will need to be negotiated between two contractors on a commercial basis. This has no bearing on the valuation of the same to the Employer.	0
1.10	Set up berthing facilities according to the needs of the site to meet the requirements of personnel exchanges, material supply, machinery and equipment in and out of the site, etc	Notwithstanding the limitations in the works carried out as observed elsewhere in the report in that it does not meet the requirements for berthing as agreed between both Parties, the area provided could be used as a landing area for the speed boats and shallow vessels as used by the Contractor. Even this benefit can only be realized if the new parties assigned the Contract are mindful of using this area for establishing their temporary facilities. As such, depending on the current extent of works carried out by the new parties assigned the works and their plans for establishing temporary facilities, the	0 - 80,020.71

		benefits to be derived from usage of this area may not be very significant.	
2	Dredging and Reclamation works		
2.1	Coral harvesting, conservation, transportation, preparation of transplanted areas, coral fixation and monitoring and testing.	While it is acknowledged that the coral harvesting works were completed (with the limitations outlined in section 2 of this report), it is noted that these works will not be carried over to the new party employed for the works. As such, there is no tangible benefit of this item that will be carried over to other parties assigned the works.	0
2.2	In survey, excavation, transportation, backfilling, compaction, slope management and out of survey.	As the new contractors' methodologies for carrying out bund wall works may differ from that proposed by the current Contractor, it is deemed that there is no tangible benefit to the method statement provided that can be utilized by the new contractors. It is difficult to provide a current value of works for the bund wall to be carried over to the new contractors' works as we do not have sufficient information regarding the integrity of the bund subsequent to the takeover of the site by the Employer. As such, we have provided the upper limit for the valuation as referenced in <i>Section 2</i> of this report. With respect to the procurement of silt screens for the bund wall, if the installed silt screens are intact the valuation provided previously will be a tangible benefit to the new contractors. However as mentioned elsewhere in this report, this valuation may be subject to change if the Contractor is able to hand over any additional silt screens procured. It is noted that as mentioned in <i>Section 2</i> of this report, we do not have any substantiation that these materials are onsite and have therefore disregarded the Contractor's claim that these items were procured.	Up to 91,606.96
Total			Up to 976,627.67

Figure 9: Summary of value of tangible works to be taken over by the next contractor

3.3. Comments on outstanding issues and potential claims

As a pre-requisite to undertake the directive to assess to any submitted or potential claims by the Contractor, we have analyzed the current contractual standing of the parties in relation to obligations and remedies allowed by the contract as well as the various communication between the parties.

3.3.1. Commencement

The contract is very clear on the conditions that must be fulfilled for the different sections of the contract. Both HDC and the Contractor seemed to have interpreted the Contract terms to mean that the project has not commenced, by virtue of the non-closure of the financing arrangement as a main condition for commencement. This has been stated in the Contractor's latest monthly progress report as well.

Notwithstanding this mutual stand, we believe that **the requirements for commencement for Section 1** of the contract **have been met**. Furthermore, the deemed actions of both parties can be construed as acknowledgement that these conditions have been met as well, despite their stand to the contrary.

It is equally important to note that the specific **conditions for commencement for Section 2 and Section 3 have not been met**. This has implications for evaluating any possible claims from the Contractor on loss of profit.

3.3.2. Advance payment/ Interim Payments

The initial requirement for making the full payment for the advance payment of approx. *USD 39.8282 million (15% of the full contract sum)* was subsequently relaxed to an instalment scheme spread over three months. HDC has paid the first instalment of *USD 13.27 million*. – an equivalent of *5% of the contract value*. It is important to note that if the sections of the contract are considered, this constitutes in excess of *46%* of the total value allocated for *Section 1* in the BoQ.

Assertions by the Contractor that the full advance payment was not paid by HDC may be countered by the stating that no advance payment claim was made for the balance supported by the respective advance payment guarantees (that we have been able to discern through the documents provided). As this appears to have been resolved through the mutually executed Addendum, we can be optimistic that no claims on this front can be expected.

A crucial and unfortunate note on the remedies available for the recovery of the advance payment (or the balance after deduction of payments due to the contractor) is that the **Advance Payment Guarantee has elapsed** before the mutual closure of the contract.

On the issue of interim payments, the Contract is quite explicit in stating that no interim applications can be submitted prior to the signing of the financial agreement. Thus, although the basis of submitting IPA as an interim payment application is flawed contractually, we have evaluated this on the basis of final payments due to Contractor for works executed and thus have not made any adjustments for advance payment recovery or withholding of retention. This is addressed further in the final recommendations.

3.3.3. Current status of the Contractor vis-à-vis termination, mutual closure, site takeover

With the communication by HDC of the intent to close the contract and takeover of the site, regardless of the follow-up alternatives of awarding other works to the Contractor, it is evident that the Contractor's role in the project has come to a close.

The communication that we have reviewed so far suggests that both parties acknowledge this and that the Contractor has not formally raised any objection to this. Since the site ownership has been passed to a third party and works are actively proceeding for works which were assigned to the Contractor, there is contractual room for the Contractor to interpret that the Contract has been terminated.

However, as communication to close the project was formally communicated to the Contractor in *July 2025* and the Contractor only alluded to potential claim on the loss of profit in the letter of *Dec 2025*, it would appear that any such claim is time barred (*Clause 20.2 Claims for payment and/or EoT, PCC – Part B*). It would appear that this statement was made to urge HDC to agree to the values the Contractor claimed in their adjusted IPA.

It is also noted that the Contractor may be eligible for financing charges for delayed payments for the release of advance payment. As we did not have the details of the release of payments, this calculation was not carried out in detail in this report (*Clause 14.8. Delayed payment, PCC – Part B*).

We would also like to strongly opine that should the Contractor opt to claim for loss of profit despite their weak position, it cannot apply to the full project – rather that it should apply to the Section of the Contract which had formally commenced (*Section 1 only*).

3.4. Final comments and recommendations for project closure

Because of the relatively unusual provisions in the contract especially as they link the overall project performance to enabling a financing package, the deemed termination of the contract by virtue of another entity executing the scope of works assigned to the Contractor as well as the elapsing of the contractual remedy to recover the advance payment, **we are of the strong opinion that a mutual closure is the best and most practical way forward**. This would best be done by early settlement of the monies due to the contractor for the works that have been done as assessed objectively.

We do believe that the amount claimed by the Contractor is excessively inflated and we have tried to objectively assess this with regard to the contract and the provisions therein, the communication between the parties and the evidence of the work carried out.

We would like to reiterate that there are two items for which the Contractor's claims can be further assessed for a fair value and adjustment of the total:

- a) The area of coral re-harvested: This is a high-value item. The measurable parameter is the full area (*max.* of 352 Ha). We note that none of the progress reports relating to this line item refer to this metric and that we do not have any measure of actual performance of this item.

However, the coral reef transplantation team have noted that there were areas where dead coral were present on the main reefs and that these areas were not transplanted. Thus, while we have recorded the value claimed by the contractor, we suggest that this survey be undertaken if possible for additional verification.

While the areas where the coral was transplanted may now be less than the area that were initially transplanted as some may have died, the areas of the reef from which the coral has been harvested can be assessed if the area has not been filled. If there are areas where coral was not removed (in the entire 352 Ha), the area recorded should be revised and valuation adjusted accordingly.

- b) Silt screens: In our valuation we have deducted the amount for the procurement for the silt screens as claimed by the Contractor (citing their supply contract as a supporting document). However, should the contractor be able to show the physical existence on site of such material the value corresponding to this item could be revised.

3.5. Recommendations on how similar situations can be handled in future projects

This section outlines how similar situations can be addressed in future projects from a preventative standpoint.

3.5.1. Assigning a qualified and experienced consultant to take on the role of Employer's Representative:

Having an external Employer's Representative's role rather than one nested within the Employer's organization is more advisable practice, particularly for a project of this magnitude and complexity. This, as we feel the adoption of this role by the Employer's organization introduces issues from the perspective of project governance and independent review and determination during project management. It is noted that there is an apparent conflict of interest when the leading project management team and the project development team ultimately report to the same authority.

We do believe that the Employer's vested interest in completing the project with due speed and efficiency needs to be tempered by insistence on the necessary checks and balances in terms of quality control, documentation management and strict conformance to contractual requirements. Hiring an external Employer's Representative is therefore much more advisable in terms of independent project governance, ensuring compliance with contractual requirements, and abiding by the spirit of the requirements set out in the FIDIC suite of contracts.

3.5.2. Establishing a dedicated Project Management Task Team:

We understand that the team which handled the project were not a team dedicated to this project alone and that they have obviously done a very reasonable job, especially considering difficult scenarios where the project funding was not finalized and external factors governed the project's momentum.

However, given the high value of the project, i.e. that of USD 265,520,000, we would advise the formation of a dedicated task team with necessary experience and qualifications in handling projects of this nature and magnitude. We highlight particularly the necessity of a dedicated project director with extensive experience and qualifications to lead such teams. It is also crucial that specialist input on project components such as geotechnical/coastal elements etc. should be a part of the organizational framework

We feel this would go a long way towards addressing some of the challenges this project faced in terms of formulation, commencement, supervision and closure. While this would add to the Employer's costs for project management, we feel it would be a marginal cost given the projects' value and would be well justified by the savings attained through enhanced project management and delivery.

3.5.3. Document control and notices:

The above recommendations should assist in large part in the management of documentation throughout the project. This requirement is highlighted in light of some of the shortfalls discovered in some of the project documentations submitted by the Contractor. Most of these shortfalls have been highlighted in the analysis component of this report and include, among others, the missing information in the feasibility reports, method statements, survey and test reports.

It was particularly noted and mentioned separately by the Contractor in their final claims' justification statement regarding the lack of closure by the Employer on some of their revised submissions. These represent risks to the Employer in cases such as this where the Contract comes to an abrupt termination. It is therefore advised that the Employer's responses should be provided on a timely basis and should be ultimately signed off by a person of appropriate seniority.

3.5.4. Acquiring and maintenance of Advance and Performance Guarantees:

Ensuring Performance and Advance Payment guarantees are obtained and maintained throughout the contract period are some of the major safeguards available to the Employer in the event of the Contractor's failure to perform and/or contract termination. As such, release of these remedies to recover the advance payment issued by allowing the advance payment guarantee to elapse and amending the Contract requirements to exempt the

Contractor from having to furnish the Performance Guarantee is particularly inadvisable, as was unfortunately the case in this project.

We therefore highlight being mindful of the same for future projects.

3.5.5. Employer's preparation for project commencement:

Several issues were identified in project commencement including delays in the release of advance payment and compilation of relevant information to supply to the Contractor for performance of their responsibilities. We therefore recommend for the immediate requirements subsequent to commencement to be fully prepared prior to Contract signing to ensure that there are no barriers to the smooth execution of the Contract.

3.5.6. Care in drafting Employer's Requirement and BoQ breakdown:

It is recommended that the Employer's requirements be thoroughly checked and vetted by extensively experienced and qualified specialist engineers prior to project tender. This, as we did notice some weaknesses in the prepared Employer's requirements in terms of specifying the testing regimes for aspects like geotechnical parameters and the relevant timelines.

It was moreover noted that some elements of the contractual requirements were duplicated in multiple areas of the breakdown without specifying details as to the reasons for the same (For e.g. bathymetry requirements were duplicated in items 1.3 and 1.4 resulting in the Contractor claiming for the same work in both items).

3.5.7. General considerations for EPC Contracts:

In the case of EPC contracts, the importance of early management of timelines, cost breakdowns and methodologies cannot be overstated. As such, it is advised to acquire from the Contractor detailed schedules, breakdown of costs for lump sum amounts (particularly for high value items such as preliminaries and mobilization works) and finalize terms for payment dispersion.

In addition, it is strongly recommended to thoroughly vet the payment schedules and BoQ breakdowns provided by the Contractor to ensure lack of replication, avoid excessive front loading and ensure that the Contractor's stated sums are representative of the market values.

3.5.8. Project closure:

In the event of project closure prior to completion of project works, it is strongly advised to pursue contractual recourses wherever possible. For example, we do feel that the Employer initially was in a sound position to claim grounds for termination due to non-performance by the Contractor in this project. This would have made the exit from the current Contract much easier to manage for the Employer. It is noted that while this may have been driven by strategic government policy (i.e. to have the project mutually closed than contractually terminated) in this particular project, our recommendation is given for projects in general.

The inclusion of separate project assignments that are not included within this Contract in the project settlement/closure agreement/addendum makes the situation more complicated and difficult to objectively resolve within the terms of the agreed Contract.

3.5.9. Project planning at inception:

It is advised to ensure that all projects have adequate studies done at inception with respect to needs assessment, feasibility, planned methodology for implementation, alignment with other complementary initiatives and alignment with long term national development goals.

This would assist in mitigation of project interruptions and interventions by the Employer after contract signing once the project is underway (due to misalignment with current goals and policy direction) and help avoid events that could result in variations and increase risks due to Employer's breach of agreed contractual terms.

Annex I: Signed Payment Sheet and BoQ

Dredging, Reclamation and Shore Protection for Rasmale Sites A,B,H,I & K - CRCC

SN	Work Categories/ Milestones	Milestone Activities/ Major Deliverables	Relavnt Sections	Work Breakdowns (WBS)	Proposed Capped Sum	Corresponding % of Contract Amount for each Milestone	Value of Works as per the corresponding % of Contract Amount	Measuring Unit	Reference Qty	Expected completion dates for each
1	Mobilization	Mobilization of Contractor personnel, materials and marine machineries and equipments for Section 1.	Section1	The Contractor intends to use in the Section 1 of the mobilization of key personnel, materials and machinery and equipments for geo technical investigation, survey, feasibility study report, design including inception, initial and detail design report, environmental monitoring and survey, insurance, temporary facilities excluding temporary production processing area, coral relocation.	10,000,000.00	0.75324%	2,000,000.00	Item	1	
2		Mobilization of Contractor personnel, materials and marine machineries and equipments for Section 1&2.	Section1&2	The Contractor intends to use in the Section 1&2 of the mobilization of personnel, material and dredging vessels for dredging and reclamation works.		2.63633%	7,000,000.00	Item	1	
3		Mobilization of Contractor personnel, materials and marine machineries and equipments for Section 3.	Section 3	The Contractor intends to use in the Section 2 of the mobilization of other personnel, materials and machinery and equipments.		0.18831%	500,000.00	Item	1	
4	Preliminaries	Feasibility studies	Section 1	Provide feasibility study reports for the project.	20,000,000.00	0.16776%	445,443.00	Item	1	
5		Coral relocation	Section 1	Coral harvesting, conservation, transportation, preparation of transplanted areas, coral fixation and monitoring.		1.12684%	2,992,000.00	m ²	3520000	
6		Geo Technical Investigation	Section 1	Geophysical survey and geotechnical investigation.		0.48919%	1,298,910.00	Item	1	
7		Survey	Section 1	Appointment of an independent surveyor.		0.20376%	541,018.00	Item	1	
8			Section 1	Initial topographic surveys and preparation of survey reports.		0.13584%	360,679.00	Item	1	
9		Temporary office & living area	Section 1	Set up office and living facilities on site, including providing the employer with necessary office and living facilities and transportation as required by the contract.		0.50013%	1,327,943.00	Item	1	
10		Temporary jetty	Section 1	Set up berthing facilities according to the needs of the site to meet the requirments of personnel exchanges, material supply, machinery and equipment in and out of the site, etc.		0.19642%	521,528.00	Item	1	
11		Temporary production processing area	Section 2	Warehouse, machine repair workshop, etc.		0.04748%	126,066.00	Item	1	
			Section 3	Batching plant of concrete, component prefabrication plant, steel processing plant.		0.30129%	800,000.00	Item	1	
12		Insurance	Section 1	Provide all risk insurance, third party liability insurance and group personal accident insurance and expatriate medical insurance.		0.62903%	1,670,195.00	Item	1	
13		Inception design	Section 1	i.Synthesis of background information, literature review. ii.Bathymetry and survey. iii.Framework for methodologies and consultation plan with schedule.		0.43520%	1,155,544.00	Item	1	

Dredging, Reclamation and Shore Protection for Rasmale Sites A,B,H,I & K - CRCC

SN	Work Categories/ Milestones	Milestone Activities/ Major Deliverables	Relavnt Sections	Work Breakdowns (WBS)	Proposed Capped Sum	Corresponding % of Contract Amount for each Milestone	Value of Works as per the corresponding % of Contract Amount	Measuring Unit	Reference Qty	Expected completion dates for each
14	Preliminaries	Initial design	Section 1	Presentation of design alternatives and feasibility.		0.87040%	2,311,087.00	Item	1	
15		Detail design	Section 1	i.Detail design drawings for reclamation, shore protection, and channels including all plans, elevations, sections and details. ii.Hydraulic and Coastal Studies: Detailed analysis and modeling of wave patterns, tidal currents, sediment transport, and shoreline evolution. iii.Geotechnical investigation report. iv.Sediment plume movement model/ any simulation model. v.Standards and codes. vi.Detail methodology for constructions. vii.General requirements and technical requirements. viii.Technical Specifications. ix.Priced Bill of Quantities.		0.87040%	2,311,087.00	Item	1	
16		Bund wall	Section 1&2	The bund wall in Area A includes excavation, transportation, backfilling, compaction, and slope management.		0.37771%	1,002,900.00	m³	133720	
			Section 1&2	The bund wall in Area K,B,H&I includes excavation, transportation, backfilling, compaction, and slope management.		1.18092%	3,135,600.00	m³	418080	
18	Dredging & Reclamation	Dredging & Reclamation - 352 Ha	Section2	In survey, geo technical investigation, dredging & reclamation, compaction, out of survey, construction test and completion test.	171,661,000.00	64.65067%	171,661,000.00	m³	17900000	
19		Fuel for the D&R Works	Section2	Fuel consumption of marine machinery equipments used in dredging and reclamation works.	21,480,000.00	8.08976%	21,480,000.00	m³	17900000	
20	Shore Protection	Shore Protection Works	Section 3	To be detailed after detail design.	23,936,000.00	9.01473%	23,936,000.00	Item	1	
21	Environmental Monitoring & Surveyors	Engage an environmental consultancy	Section 1	Engage an environmental consultancy	800,000.00	0.12052%	320,000.00	Item	1	
22		Approval of the Environmental Management Plan	Section 1	Prepare environmental management plan and submit it to the Employer for approval.		0.03013%	80,000.00	Item	1	
23		EIA Monitoring (Construction Phase)	Section 2	EIA Monitoring (Construction Phase)		0.03766%	100,000.00	Item	1	
24		EIA Monitoring (Construction Phase)	Section 3	EIA Monitoring (Construction Phase)		0.03766%	40,000.00	Item	1	
25		EIA Post Monitoring (Immediately After Construction)	Section 2	EIA Post Monitoring (Immediately After Construction)		0.03390%	90,000.00	Item	1	
26		EIA Post Monitoring (Immediately After Construction)	Section 3	EIA Post Monitoring (Immediately After Construction)		0.01506%	40,000.00	Item	1	
27		EIA Post Monitoring (After Construction Extended)	Section 2	EIA Post Monitoring (After Construction Extended)		0.03390%	90,000.00	Item	1	
28		EIA Post Monitoring (After Construction Extended)	Section 3	EIA Post Monitoring (After Construction Extended)		0.01506%	40,000.00	Item	1	

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Dredging, Reclamation and Shore Protection for Rasmale Sites A,B,H,I & K - CRCC

SN	Work Categories/ Milestones	Milestone Activities/ Major Deliverables	Relavant Sections	Work Breakdowns (WBS)	Proposed Capped Sum	Corresponding % of Contract Amount for each Milestone	Value of Works as per the corresponding % of Contract Amount	Measuring Unit	Reference Qty	Expected completion dates for each
29	Demobilization	Demobilization of Contractor personnel, materials and marine machineries and equipments for Section 1.	Section 1	Demobilization of Contractor personnel, materials and marine machineries and equipments for Section 1.	5,000,000.00	0.24480%	650,000.00	Item	1	
30		Demobilization of Contractor personnel, materials and marine machineries and equipments for Section 2.	Section 2	Demobilization of Contractor personnel, materials and marine machineries and equipments for Section 2.		1.07336%	2,850,000.00	Item	1	
31		Demobilization of Contractor personnel, materials and marine machineries and equipments for Section 3.	Section 3	Demobilization of Contractor personnel, materials and marine machineries and equipments for Section 3.		0.56493%	1,500,000.00	Item	1	
32	Provisional Sums	Under Employer Only.	TBD	Applicable as per clause 13.4 of General Conditions of contract.	12,643,850.00	4.76190%	12,643,850.00	Item	1	
TOTAL CONTRACT SUM IN USD (EX: GST)					265,520,850.00	100.00%	-			

Clarification:

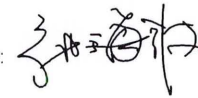
The corresponding milestone activities in the milestone payment schedule are based on the content of the three sections with sequential order relationship as agreed in the contract, and when it is being executed, certain milestone activities will reflect the lack of science in the arrangement of the construction process. For example, after completing the reclamation of one of the areas A, B, H, I & K, the shore protection work should be carried out immediately instead of waiting for the completion of reclamation of all areas before carrying out the shore protection work, and similarly like the mobilisation of the dredging vessel, geological survey, etc.

The Contractor may, during the course of the Project, adjust the timing of the implementation of the Milestone Activities in this Schedule as appropriate in accordance with the **Construction Organisation Plan and Work Programme** prepared by the Contractor and once a Milestone Activity has been completed, the Employer shall recognise the value of the work performed by the Contractor in respect of the Milestone Activity in accordance with the rates set out herein, irrespective of the section of this Schedule where the Milestone Activity has been indicated.

This a high level initial Payment schedule, which shall be further detailed after the detail design is approved.

Signature of the Employer's representative:

Signature of Contractor's representative:



Employer's stamp:

Contractor's stamp:




Bill of Quantities

N0.	Item	Discription	Unit	Quantity	Unit Price (USD)	Total Price (USD)	Remarks
1.Other costs of project construction							
1.1	Feasibility study report	Provide feasibility study reports for the project.	Item	1	445,443.00	445,443.00	
1.2	Geo Technical Investigation	Geophysical survey and geotechnical investigation.	Item	1	1,298,910.00	1,298,910.00	
1.3	Survey	This includes the hiring of an independent survey engineer, initial topographic surveys and preparation of survey reports during construction.	Item	1	901,697.00	901,697.00	
1.4	Engineering design	Design inception, initial design and detail design report.	Item	1	5,777,718.00	5,777,718.00	
1.5	Insurance	Provide all risk insurance, third party liability insurance and group personal accident insurance and expatriate medical insurance.	Item	1	1,670,195.00	1,670,195.00	
1.6	Environmental Monitoring and Surveys	Appointment of environmental consulting agent, preparation of environmental management plans, environmental monitoring and surveys.	Item	1	800,000.00	800,000.00	
1.7	Mobilization and Demobilization	Mobilization and demobilization of Contractor personnel, materials and marine machineries and equipments.	Item	1	15,000,000.00	15,000,000.00	
1.8	Temporary office living facilities	Set up office and living facilities on site, including providing the employer with necessary office and living facilities and transportation as required by the contract.	Item	1	1,327,943.00	1,327,943.00	
1.9	Temporary production processing facilities	Mixing plant, component prefabrication plant, steel processing plant, warehouse, machine repair workshop, etc.	Item	1	926,066.00	926,066.00	
1.10	Temporary jetty	Set up berthing facilities according to the needs of the site to meet the requirements of personnel exchanges, material supply, machinery and equipment in and out of the site, etc.	Item	1	521,528.00	521,528.00	
Subtotal amount (USD)						28,669,500.00	
2.Dredging and Reclamation works							
2.1	Coral Relocation	Coral harvesting, conservation, transportation, preparation of transplanted areas, coral fixation and monitoring and testing.	m ²	3520000.00	0.85	2,992,000.00	
2.2	Bund wall	In survey, excavation, transportation, backfilling, compaction, slope management and out of survey.	m ³	551800.00	7.50	4,138,500.00	Provisional estimate of quantity and tentative unit price.

[Handwritten signature]

Bill of Quantities

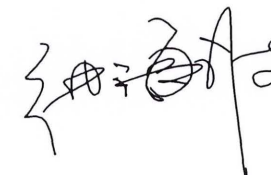
N0.	Item	Discription	Unit	Quantity	Unit Price (USD)	Total Price (USD)	Remarks
2.3	Reclamation	In survey, observation of excavation, transportation, backfilling, compaction, slope management and settlement of sand sources, out of survey and testing.	m³	17900000.00	9.59	171,661,000.00	Provisional estimate of quantity and tentative unit price.
		Fuel consumption of marine machinery equipments used in dredging and reclamation works.	m³	17900000.00	1.20	21,480,000.00	
		Reclamation cost increase per 5NM per CBM if borrow area exceeds 15NM.	m³		2.50	-	
Subtotal amount (USD)						200,271,500.00	
3.Shore Protection works		To be detailed after detail design.	Item	1	23,936,000.00	23,936,000.00	
4.Provisional Sum							
4.1	Provisional Sum	Under Employer Only. Applicable as per clause 13.4 of General Conditions of contract.	Item	1.00	12,643,850.00	12,643,850.00	TBD
Subtotal amount (USD)						12,643,850.00	
Total amount (USD)						265,520,850.00	

Disclaimer:

1. This preliminary BOQ is required to be updated and revised in accordance with clause 14.4 of general terms and clause 8.1 of ER of the Contract once the Contractor has completed and get approval of the Detail Design from the Employer.
2. This document will be the basis of preparing the micro level Breakdowns and BOQ by the contractor, which will be used for monitoring and measurement of the relevant work. For clarity, HDC is not endorsing nor approving the rates and items included in this document, since the detailed BOQ will be submitted as mentioned in the above point 1.
3. Any item missing in this preliminary BOQ but included in the ER should be included in the detailed BOQ submission.

Signature of the Employer's representative:

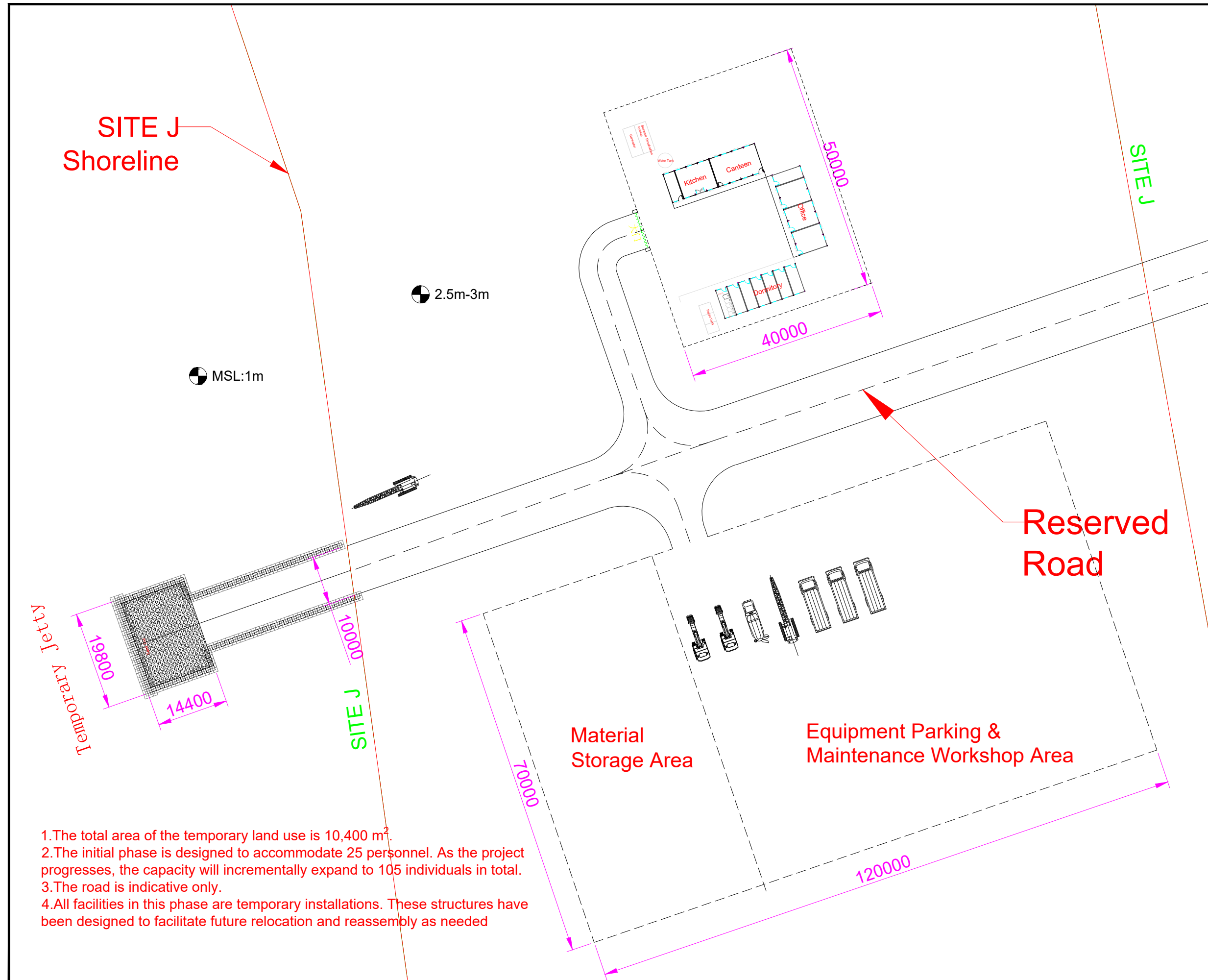
Signature of Contractor's representative:



Employer's stamp:

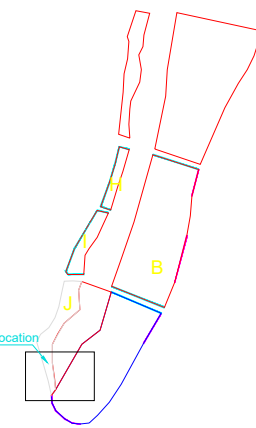
Contractor's stamp:

Annex 2: Contractor's submission of temporary layout



- 1.The total area of the temporary land use is 10,400 m².
2.The initial phase is designed to accommodate 25 personnel. As the project progresses, the capacity will incrementally expand to 105 individuals in total.
3.The road is indicative only.
4.All facilities in this phase are temporary installations. These structures have been designed to facilitate future relocation and reassembly as needed

Description



NOTES

The units used in the drawing are in millimeters (mm).

Approval

Date

Checking

Date

Design

Date

Client

 HOUSING DEVELOPMENT CORPORATION LIMITED

Contractor

 中铁建港航局集团有限公司
CHINA RAILWAY GROUP LIMITED

Project Name:

Dredging, Reclamation and Shore Protection for Rasmalé Sites A,B,H,I & K

Drawing Name

Overall Layout Plan for Temporary Facilities

Drawing Number

Revision

2

Scale

Date

2024/12/27

Annex 3: Draft response to Contractor concerning contractor's claims for completed project works

Draft response to Contractor concerning contractor’s claims for completed project works

1. References

- a) Contract agreement nos. HDC(161)-PMD/CNTR/2024/11, HDC(161)-PMD/AGR/2024/74, HDC(161)-PMD/AGR/2024/75 signed on 29th July 2024
- b) Payment Schedule and BoQ signed 23" December 2024
- c) Contractor’s “detailed report for IPC 01” submitted on 21st November 2025
- d) Contractor’s IPA 01 updated on 06th December 2025

2. General introduction

We have reviewed your progress claims for works completed for the project to date. Due consideration was given to the following:

- a) Review of signed contractual documents
- b) Review of claimable items under the signed BoQ breakdown and Payment schedule
- c) Review of Contractor’s claims and reasonings submitted
- e) Review of relevant documentation provided for the project

3. Document review and analysis

For ease of reference and clarity, all items under this section have been referenced based on the signed payment schedule. The relevant reference numbers as per the signed BoQ breakdown are also here provided.

3.1. Item #4: Feasibility studies (BoQ item no. 1.1.)

#	Description	BoQ Val. (USD)	Claimed Val. (USD)	Assessed Val. (USD)	Assessed % Completed
Milestone: Preliminaries (section 1)					
4	Provide feasibility study reports for the project	445,443.00	445,443.00	111,360.75	25%
Total		445,443.00	445,443.00	111,360.75	25%

Notwithstanding CRCC’s comments that the feasibility report was limited by information not provided by *HDC*, it is noted that the **obligation of CRCC under the Contract was not met**. Specifically, there is a *lack of coverage on risk elements* and *cost of infrastructure* required to evaluate the project feasibility. Additionally, the *risk of cost escalation associated with the unavailability of sufficient fill material* within 15 nautical miles was not addressed.

From a pure **compliance perspective** of delivering the report for a specific objective as acknowledged by CRCC in their correspondence with *HDC* (i.e., for the purpose **of enabling financing**) we feel that there may even be justification for rejecting the claim for this component entirely. However, as there appears to be some shortfall in the obligations by *HDC* to provide relevant information, it is felt that acceptance of works up to a maximum of **25%** of the allocated value under the payment schedule is reasonable.

3.2. Item #6: Geophysical and geotechnical survey/investigation (BoQ item no. 1.2.)

#	Description	BoQ Val. (USD)	Claimed Val. (USD)	Assessed Val. (USD)	Assessed % Completed
Milestone: Preliminaries (section 1)					
6	Geophysical survey and geotechnical investigation	1,298,910.00	1,298,910.00	592,000.00	46%
Total		1,298,910.00	1,298,910.00	592,000.00	46%

Based on the information provided, it is apparent that **no geophysical survey was completed**.

This item is specifically included in the *BoQ breakdown, Payment Schedule* and the *main Contract requirements* (Clause 07 of the RFP). It is also very clear in the initial cost breakdown, that **a distinct geophysical was required** by virtue of the large sum of *USD 1.299m* allocated for this line item.

In addition, some of the **minimum test requirements** instructed under the ER were **not carried out**. This includes the *SPC test, MID test, Plate bearing test, and Sand replacement test*. HDC had also provided an additional *reminder* regarding the required tests on *8th May 2025* in response to the Contractor's method statement on *27th April 2025*.

An order of magnitude calculation was carried out to establish the amounts fairly due to the Contractor for works completed. This came to a conservative estimate of **USD 592,000**.

3.3. Item #7,8: Appointment of surveyor and carrying out of topographic surveys (BoQ item no. 1.3.)

#	Description	BoQ Val. (USD)	Claimed Val. (USD)	Assessed Val. (USD)	Assessed % Completed
Milestone: Preliminaries (section 1)					
7	Appointment of an independent surveyor.	541,018.20	180,321.37	180,321.37	33%
8	Initial topographic surveys and preparation of survey reports.	360,678.80	360,678.80	360,678.80	100%
Total		901,697.00	541,000.17	541,000.17	60%

As per the signed **Payment schedule**, completion is established **60%** of total value of works for the item (i.e. 33% completion for *item #7* and 100% completion for *item #8*, i.e. the bathymetry survey)

3.4. Item #13, 14, 15: Design (BoQ item no. 1.4)

#	Description	BoQ Val. (USD)	Claimed Val. (USD)	Assessed Val. (USD)	Assessed % Completed
Milestone: Preliminaries (section 1)					
13	Inception design	1,155,543.60	381,329.39	0	0%
	i. Synthesis of background information, literature review				
	ii. Bathymetry and survey				
	iii. Framework for methodologies and consultation plan with schedule				
14	Initial design	2,311,087.20	0	0	0%
15	Detailed design	2,311,087.20	0	0	0%
Total		5,777,718.00	381,329.39	0	0%

The Contractor had submitted two main arguments for their claim under this item:

- Contention for submission of 1 of 3 deliverables under 1.4 (bathymetry) on 4th May 2025.
It is noted that the Contractor's argument for the survey requirements (1.3) was also mainly hinged on this deliverable. We have allowed that claim and hence the Contractor cannot claim for the same deliverable under this as no additional detailed bathymetry works were carried out.
- Contention that they ceased the design work (inception report) when the client notified them of possible novation to an alternate project, and that they had incurred costs for the works done in the interim.
This decision to cease the design work appears to be a unilateral decision by the Contractor as no formal communication to cease the design works was issued from HDC. Furthermore, there was no final deliverable and no substantiation of the actual costs incurred in their *Detailed report for IPC 01*.

3.5. Item #12: Insurance (BoQ item no. 1.5)

#	Description	BoQ Val. (USD)	Claimed Val. (USD)	Assessed Val. (USD)	Assessed % Completed
Milestone: Preliminaries (section 1)					
12	Provide all risk insurance, third party liability insurance and group personal accident insurance and expatriate medical insurance.	1,670,195.00	217,125.35	22,746.47	1%
Total		1,670,195.00	217,125.35	22,746.47	1%

Contractor had claimed for 60% and 40% completion for Personal Accident Insurance and Employer's Liability Insurance respectively, considering the duration for which the personnel deployed were employed. It is noted that this did not account for that only 11 out of 105 personnel (the anticipated total manpower listed in their method statements and submissions for layouts of temporary facilities) had been deployed. This value was therefore accordingly reduced to account for this remission.

3.6. Item #21-28: Environmental consultation, management plan, monitoring and surveys (BoQ item no. 1.6)

#	Description	BoQ Val. (USD)	Claimed Val. (USD)	Assessed Val. (USD)	Assessed % Completed
Milestone: Environmental Monitoring & Surveyors (sections 1,2,3)					
21	Engage an environmental consultancy	320,000.00	133,320.00	133,320.00	33%
22	Approval of the Environmental Management Plan	80,000.00			
23-28	EIA monitoring (construction phase, post-construction)	400,000.00	0	0	0%
Total		800,000.00	133,320.00	133,320.00	17%

Claim that 17% of the works for this item has been carried out is accepted.

3.7. Item #1-3, 29-31: Mobilization and demobilization (BoQ item no. 1.7)

#	Description	BoQ Val. (USD)	Claimed Val. (USD)	Assessed Val. (USD)	Assessed % Completed
Milestone: Mobilization, demobilization (section 1,2,3)					
1	Mobilization of Contractor's personnel, machinery and equipment for section 1	2,000,000.00	1,666,600.00	1,666,600.00	83%
2	Mobilization of Contractor's personnel, machinery and equipment for section 1&2	7,500,000.00	0	0	0
3	Mobilization of Contractor's personnel, machinery and equipment for section 3	500,000.00	0	0	0
29	Demobilization of Contractor personnel, materials, marine machinery and equipment for Section 1	650,000.00	585,000.00	487,480.50	75%
30	Demobilization of Contractor personnel, materials, marine machinery and equipment for Section 2	2,850,000.00	0	0	0
31	Demobilization of Contractor personnel, materials, marine machinery and equipment for Section 3	1,500,000.00	0	0	0
Total		15,000,000.00	2,251,600.00	2,154,080.50	14%

Contractor's claim that 83% of item #1 (of the *Payment Schedule*), i.e. mobilization for Section 1, is accepted. Contractor's submission that 90% completion of demobilization for the works mobilized as per item #29 of the *Payment schedule* is accepted as well.

However as demobilization is necessarily derived as a percentage of the items mobilized as opposed to a blanket percentage applied to *item #29* of the Payment Schedule, the value for this has been adjusted accordingly.

It is noted that Contractor had not mobilized for *geophysical survey* under *item 1.2*. We have currently not accounted for this deduction for ease of settlement.

3.8. Item #9: Temporary office and living area (BoQ item no. 1.8)

#	Description	BoQ Val. (USD)	Claimed Val. (USD)	Assessed Val. (USD)	Assessed % Completed
Milestone: Preliminaries (section 1)					
9	Set up office and living facilities on site	1,327,943.00	690,530.36	316,176.90	24%
Total		1,327,943.00	690,530.36	316,176.90	24%

Contractor's progress was compared against their method statement for deployment of temporary office and living facilities. As facilities suitable for *25 persons* out of a total of *105* to be deployed were established, the completion percentage for this item was adjusted accordingly.

3.9. Item #10: Temporary jetty (BoQ item no. 1.10)

#	Description	BoQ Val. (USD)	Claimed Val. (USD)	Assessed Val. (USD)	Assessed % Completed
Milestone: Preliminaries (section 1)					
10	Set up berthing facilities for personnel exchange, material supply, machinery and equipment transportation etc.	521,528.00	260,764.00	80,020.71	15%
Total		521,528.00	260,764.00	80,020.71	15%

Although the Contractor is now claiming for the speed landing to be the temporary berthing facility, it is noted that they had not submitted a proposal to change the design for the temporary jetty from the initial submission that we could determine from the documents provided. Thus, it is apparent that the Contractor themselves did not consider this to be the temporary jetty mentioned in the Contract.

The Contractor in their progress report for the month of *June 2025* conceded that even this area was only created for speed boat landing. Therefore, an argument could be made to reduce the amount further by rationalizing that no work was done for the temporary berthing requirement as outlined under the Contract.

For ease of settlement, the submission that some works had been carried out for temporary jetty works is accepted as a concession and provided for with consideration to the accepted design. The design for the temporary jetty proposed by the Contractor includes shore protection/revetment on all sides of the jetty and a reclaimed area for landing. A cost ratio for the two elements (i.e. of shoring to reclamation) was used to assess the work per established rates for the works which the Contractor claims to have been done for the temporary jetty. I.e., for the approximate length of *30m* of shore protection which was carried out.

It is therefore deemed that this is the maximum due to the Contractor for the works completed for this item, after all possible concessions.

3.10. Item #5: Coral relocation (BoQ item no. 2.1)

#	Description	BoQ Val. (USD)	Claimed Val. (USD)	Assessed Val. (USD)	Assessed % Completed
Milestone: Preliminaries (section 1)					
5	Coral harvesting, conservation, transportation, preparation of transplanted areas, coral fixation and monitoring	2,992,000.00	2,692,800.00	2,692,800.00	90%
Total		2,992,000.00	2,692,800.00	2,692,800.00	90%

It is noted that the Contractor has not transplanted the full area as outlined in the payment schedules, claiming lack of requirement due to the condition of the corals. However, no deduction has been made for works not carried out.

This is highlighted as a concession made for the purpose of easing settlement and project closure.

3.11. Item # 16,17: Bund wall (BoQ item no. 2.2)

#	Description	BoQ Val. (USD)	Claimed Val. (USD)	Assessed Val. (USD)	Assessed % Completed
Milestone: Preliminaries (section 1)					
16	The bund wall in area A includes excavating, transportation, backfilling, compaction and slope management	1,002,900.00	510,949.56	132,991.96	3%
17	The bund wall in area K, B, H & I includes excavating, transportation, backfilling, compaction and slope management	3,135,600.00			
Total		4,138,500.00	510,949.56	132,991.96	3%

Contractor has asserted that silt screen constitutes 5% of the price for this item, that they have carried out 10% of the silt screen installation requirement and 100% of the silt screen procurement. While we accept the Contractor's submission regarding silt screen installation as well as the percentage allocation for this item, the **claim for procurement is not accepted** as there is no evidence of materials procured being onsite and no substantiation of delivery to site has been provided. It is noted that the agreement between the supplier and the Contractor is not sufficient for release of payment for materials.

It is noted that the Contractor's submission that 7.5% of the item's value is for completion of shop drawings of the bund wall is excessive, and this has accordingly been reduced based on proportions in standard practice.

The remaining percentage is deemed as allocation for the bund wall itself. We accept the Contractor's claim that 276m for this work has been completed and note that constitutes 1.82% of the total quantity of sand bund required. This is with reference to the measurements provided in the Contractor's method statement.

4. Summary

With all relevant adjustments, the amounts due to the Contractor for completed works is deemed to be as follows;

#	Description	BoQ Total (USD)	Claimed (USD)	%	Assessed (USD)	%
1	Other costs of production					
1.1	Provide feasibility study reports for the project	445,443.00	445,443.00	100%	111,360.75	25%
1.2	Geophysical survey and geotechnical investigation.	1,298,910.00	1,298,910.00	100%	592,000.00	46%
1.3	This includes the hiring of an independent survey engineer, initial topographic surveys and preparation of survey reports during construction.	901,697.00	541,000.17	60%	541,000.17	60%
1.4	Design inception, initial design and detail design report.	5,777,718.00	381,329.39	7%	0.00	0%
1.5	Provide all risk insurance, third party liability insurance and group personal accident insurance and expatriate medical insurance.	1,670,195.00	217,125.35	13%	22,746.47	1%
1.6	Appointment of environmental consulting agent, preparation of environmental management plans, environmental monitoring and surveys.	800,000.00	133,320.00	17%	133,320.00	17%

1.7	Mobilization and demobilization of Contractor personnel, materials and marine machinery and equipment.	15,000,000.00	2,251,600.00	15%	2,154,080.50	14%
1.8	Set up office and living facilities on site, including providing the employer with necessary office and living facilities and transportation as required by the contract.	1,327,943.00	690,530.36	52%	316,176.90	24%
1.9	Mixing plant, component prefabrication plant, steel processing plant, warehouse, machine repair workshop, etc.	926,066.00	-	0%	0.00	0%
1.10	Set up berthing facilities according to the needs of the site to meet the requirements of personnel exchanges, material supply, machinery and equipment in and out of the site, etc.	521,528.00	260,764.00	50%	80,020.71	15%
Total		28,669,500.00	6,220,022.27	22%	3,950,705.50	14%
2	Dredging and Reclamation works					
2.1	Coral harvesting, conservation, transportation, preparation of transplanted areas, coral fixation and monitoring and testing.	2,992,000.00	2,692,800.00	90%	2,692,800.00	90%
2.2	In survey, excavation, transportation, backfilling, compaction, slope management and out of survey.	4,138,500.00	510,949.56	12%	132,991.96	3%
2.3	In survey, excavation of sand sources, transportation, backfilling, compaction, slope management and settlement of observation, out of survey and testing.	171,661,000.00	0.00	0%	0.00	0%
2.4	Fuel consumption of marine machinery equipment used in dredging and reclamation works.	21,480,000.00	0.00	0%	0.00	0%
2.5	Reclamation cost increase per 5NM per CBM if borrow area exceeds 15NM.	0.00	0.00	0%	0.00	0%
Total		200,271,500.00	3,203,749.56	2%	2,825,791.96	1%
3	Shore Protection works					
		23,936,000.00	0.00	0%	0.00	0%
4	Provisional sum					
		12,643,850.00	0.00	0%	0.00	0%
Total		265,520,850.00	9,423,771.83	4%	6,776,497.46	3%

5. Conclusion

It is noted that although you have submitted these works as IPA 01, this valuation is carried out for the purpose of project closure discussed in prior meetings as mutually agreed between the two Parties. As such, there will naturally be no deductions for retention or advance payment recovery in this payment. Rather, the full amount of valuation is to be deducted from the Advance Payment issued to date and the balance returned to HDC as agreed.

Given the current status of the project, we believe it is in the best interests of both Parties to close this project based on mutual understanding and fair compensation of works completed. We look forward to your acceptance of the assessment so we can close this chapter and move on to future projects.