

## ***Appendix 4***

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### **Sewerage Impact Assessment**

Goldshine Investment Limited

Proposed Conversion of Part of The Pulse  
into Hotel in “Other Specified Uses (Beach  
Related Leisure Use)” and “Government,  
Institution or Community” Zones at No. 28  
Beach Road, Repulse Bay

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Sewerage Impact Assessment

Project Profile Report

February 2025

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# 1 Introduction

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## 1.1 Background

- 1.1.1 C.M. Consulting (H.K.) Limited has been commissioned by the Project Proponent to undertake a Sewerage Impact Assessment (SIA) for the Project, which comprises the proposed conversion of part of The Pulse, in Repulse Bay, to a (96-room) hotel, with gym and spa. The Site location is shown on **Figure 1**, with Architectural Drawings of the Proposed Redevelopment in **Appendix 1 of the Supporting Planning Statement (SPS)**.
- 1.1.2 This report assesses the sewerage arrangements in the vicinity of the Site and the impact of the proposed conversion with respect to sewerage issues. The purpose of this assessment is to demonstrate that the proposed conversion at the Site will not impose any unacceptable adverse impacts on the public sewerage system.

## 1.2 Information Available for the Study

- 1.2.1 Reference has been made to Drainage Services Department (DSD) Drainage Records obtained from Land's Department's GeoInfo Map website.
- 1.2.2 Reference has also been made to DSD's Sewerage Manual, Part 1, and Environmental Protection Department's (EPD's) Guidelines for Estimating Sewage Flows for Sewage Infrastructure Planning (GESF).
- 1.2.3 Reference has also been made to PlanD's Commercial and Industrial Floor Space Utilisation Survey (CIFSUS) Information Note and Cap123I, Building (Standards of Sanitary Fitments, Plumbing, Drainage Works and Latrines) Regulations.

# 2 Project Outline

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## 2.1 Project Title

- 2.1.1 The project title is "Proposed Conversion of Part of The Pulse into Hotel in "Other Specified Uses (Beach Related Leisure Use)" and "Government, Institution or Community" Zones at No. 28 Beach Road, Repulse Bay". The location of the proposed conversion is shown on **Figure 1**.

## **2.2 Proponent**

2.2.1 The proponent of the project is Goldshine Investment Limited.

## **2.3 Contact Person**

2.3.1 For issues relating to this SIA Study, please contact Ir Colin Moreby of C.M. Consulting (H.K.) Limited at 9815 2171.

## **2.4 Nature and Description of the Project**

2.4.1 The Proposed Conversion involves some demolition and alteration works for converting the UG/F and 1/F of existing building into a hotel with 96 guest rooms and conversion of existing public changing rooms on the B1/F to a gym and spa. The building height will remain unchanged at 18.05mPD (main roof level). The existing shops and restaurants on LG/F and B1/F will continue to serve visitors to The Pulse and Repulse Bay Beach. The Site Area is about 4,230m<sup>2</sup>.

## **2.5 Location**

2.5.1 The Site is located to the south of Beach Road in Repulse Bay, towards the southern end of Repulse Bay Beach.

## **2.6 Planning Application**

2.6.1 This report has been prepared in support of a S16 Submission for the proposed conversion.

# **3 Planning and Implementation Programme**

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## **3.1 Planning and Implementation**

3.1.1 The Project will be planned and implemented under the supervision of appropriately qualified and experienced professionals. The construction of any works for the Project will be carried out by a Contractor to be identified following a tender process prior to the construction phase.

## 3.2 Project Timetable

3.2.1 The proposed conversion is targeted for completion in 2026.

## 3.3 Interface with Other Projects

3.3.1 There are no known other projects which need to be considered for this SIA.

# 4 Existing Sewerage and Sewage Generation

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## 4.1 Existing Sewerage

4.1.1 The existing building at the Site connects, via a Terminal Manhole, to a 225mm diameter public gravity sewer (FWD7074340) leading to manhole FMH7036145. This manhole discharges towards the main 400mm diameter sewer in Beach Road at Manhole FMH7036173. The sewer runs from south to north along Beach Road and then along the waterfront (Seaview Promenade) to the south of Repulse Bay Road to Repulse Bay Main Sewage Pumping Station. The pumping station discharges via a 450mm diameter rising main running along Seaview Promenade and Island Road to the gravity sewerage system in Aberdeen and ultimately to the Aberdeen Preliminary Treatment Works. The existing local sewerage connection is shown on **Figure 2**. There are no known capacity problems in the existing sewerage system(s).

## 4.2 Existing Sewage Generation

4.2.1 Under the existing scenario, the UG/F of The Pulse (GFA 3,697.255m<sup>2</sup>) is occupied by retail outlets, while the 1/F (GFA 3,603.360m<sup>2</sup>) is occupied by restaurants. To establish the numbers of workers on each floor, reference has been made to the CIFSUS Information Note. These figures have been combined with unit flow rates for Commercial Activities from the GESF Report to estimate existing sewage flow rates, as set out in **Appendix A**. For the existing changing rooms and toilet facilities on the B1/F, reference has been made to the Building (Standards of Sanitary Fitments, Plumbing, Drainage Works and Latrines) Regulations, which set out the facilities to be provided for certain populations of visitors. For the unit flow factors, it has been assumed that the changing room visitors would be equivalent to the School Student population category from GESF. It should be noted that, as the comparison for this SIA is based on the sewage discharges

from the 2 internal floors affected by the proposed conversion only, stormwater allowances and inflow factors are not relevant and have not been considered (N.B. these additional factors would affect both existing and future scenarios, so do not affect the base comparison).

- 4.2.2 The flow estimates for the existing situation are a total daily discharge from the UG/F, 1/F and B1/F (changing rooms) of 353.5m<sup>3</sup>/day and a peak discharge of 20.5l/s.

## 5 Sewerage Impact Assessment

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### 5.1 Future Sewage Generation

- 5.1.1 The future sewage flow has been assessed using the proposed GFA for the hotel and worker densities set out in the CIFSUS Report (Figure 9), combined with unit flow factors from GESF. The future total daily flow will be 333.4m<sup>3</sup>/day, with a peak discharge of 19.3l/s, as set out in **Appendix A**.

### 5.2 Sewerage Impact Assessment

#### General

- 5.2.1 The sewage generation calculations included in **Appendix A** demonstrate that the proposed conversion to hotel will result in a reduction in sewage discharge from the UG/F and 1/F of The Pulse. The total daily flow will reduce from 353.5m<sup>3</sup>/day to 333.4m<sup>3</sup>/day (a reduction of approximately 6% of existing flows), while the peak discharge will reduce from 20.5l/s to 19.3l/s.
- 5.2.2 As the existing sewerage system is adequate for current conditions and the sewage generation from the Site will reduce, it can be concluded that there are no adverse sewerage impacts as a result of the proposed conversion.
- 5.2.3 The converted Site will continue to discharge via a single Terminal Manhole to existing manhole FMH7036145.



## 5.3 Recommendations

### Sewerage Connection

- 5.3.1 It is recommended that the Site will continue to discharge to existing manhole FMH7036145.

### Sewerage Improvements

- 5.3.2 No improvements to the public sewerage system(s) are required.

### Implementation and Maintenance

- 5.3.3 All internal sewerage facilities will be implemented and maintained by the Project Proponent.

## 6 Conclusions

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- 6.1.1 The proposed redevelopment of the Site will result in reduced sewage flows than existing (approximately 6% reduction).
- 6.1.2 The existing sewerage system is adequate, so no improvements will be necessary to the public sewerage system.
- 6.1.3 The Site will continue to discharge to existing manhole FMH7036145.
- 6.1.4 The proposed conversion will be provided with properly planned sewerage facilities and no unacceptable adverse impact on the public sewerage system is anticipated.

# Appendix A

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Populations and Sewage Flows

**CM010 - The Pulse Repulse Bay**  
**Existing Shopping Arcade Visitors**

See Building (Standards of Sanitary Fitments, Plumbing Darinage Works and Latrines) Regulations (Cap. 123I, Section 7A):

Item	Provision	Actual	Population Served
Watercloset fitments - Male	1 per 125	4	$125 \times 4/1 =$ <b>500</b>
Watercloset fitments - Female	3+1 per 80	7 + 1	$80 \times (7+1)/(3$ <b>160</b>

**CM010 - The Pulse Repulse Bay  
Sewage Flows**

Refer:

1. Approved GBP for Existing Building
2. Proposed Layouts for Future Redevelopment
3. PlanD "Commercial and Industrial Floorspace Utilization Survey" (CIFSUS) Report, Figure 9: Worker Density by Industry
4. EPD "Guidelines for the Estimation of Sewage Flow for Sewage Infrastructure Planning" (GESF), Table T-2: Unit Flow Factors for Commercial Flows and Student Flows
5. Building (Standards of Sanitary Fitments, Plumbing Drainage Works and Latrines) Regulations (Cap. 123I, Section 7A):

**Existing**

Floor	Utilization	GFA (m <sup>2</sup> )	Worker Density (No./100m <sup>2</sup> )	No. of Workers/ Visitors		Commercial Activity	Unit Flow Factor (m <sup>3</sup> /h/d)	Daily Flow (m <sup>3</sup> /d)
				(Calc)	(Say)			
Upper Ground Floor	Retail	3,697.255	3.5	129.40	130	J4	0.280	36.4
First Floor	Restaurant	3,603.360	5.1	183.77	184	J10	1.580	290.7
B1 Toilets - Male	Shopping			500	500	Person*	0.040	20.0
B1 Toilets - Female	Shopping			160	160	Person*	0.040	6.4
<b>Existing Total Daily Flow from B1/F (Part), UG/F &amp; 1/F</b>								<b>353.5</b>
Average Dry Weather Flow (U/s)								4.1
Contributing Population, P, @ 0.27m <sup>3</sup> /peron/day								1,309
Peaking Factor (1000<P<5,000)								5
<b>Existing Peak Discharge from B1/F (Part), U/G and 1/F of the Pulse (U/s)</b>								<b>20.5</b>

**Notes:**

- \* - Unit users of Shopping Arcade assumed as School Students from Table T-2 of GESF
- For Job Type J10, the "per-employee" unit flow factor takes into account the flows of customers.
- Assessment based on existing building alone, so Catchment Inflow Factors not applicable
- Assessment based on existing building alone, so Peaking Factors excluding stormwater allowance appropriate

**Future**

Floor	Utilization	GFA (m <sup>2</sup> )	Worker Density (No./100m <sup>2</sup> )	No. of Workers/ Visitors		Commercial Activity	Unit Flow Factor (m <sup>3</sup> /h/d)	Daily Flow (m <sup>3</sup> /d)
				(Calc)	(Say)			
B1/F, UG/F & 1/F	Hotel	6590	3.2	210.88	211	J10	1.580	333.4
<b>Future Total Daily Flow from B1/F (Part), UG/F &amp; 1/F</b>								<b>333.4</b>
Average Dry Weather Flow (U/s)								3.9
Contributing Population, P, @ 0.27m <sup>3</sup> /person/day								1,235
Peaking Factor (1000<P<5,000)								5
<b>Future Peak Discharge from B1/F (Part), U/G and 1/F of the Pulse (U/s)</b>								<b>19.3</b>

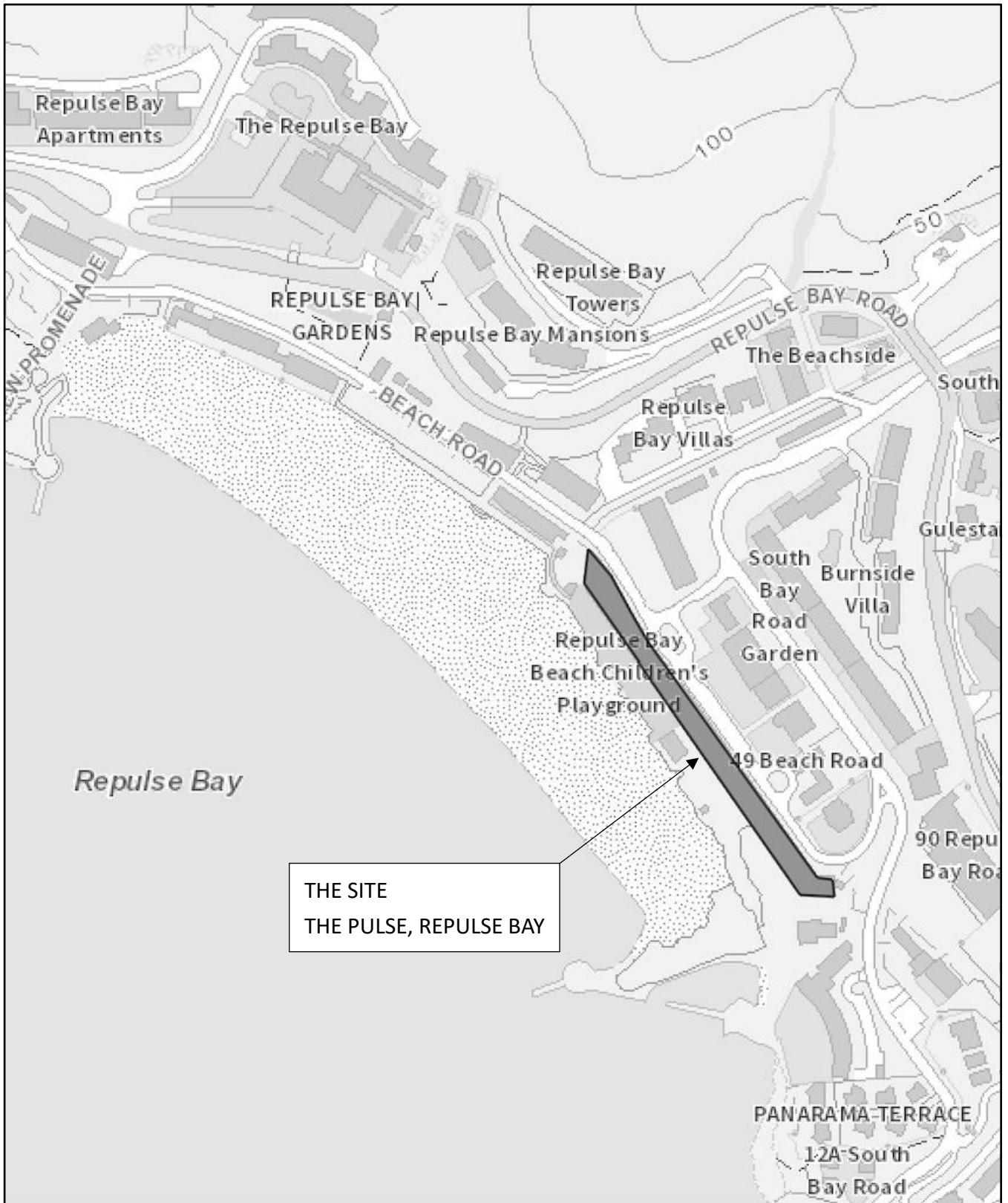
**Note:**

- For Job Type J10, the "per-employee" unit flow factor takes into account the flows of customers.
- Assessment based on existing building alone, so Catchment Inflow Factors not applicable
- Assessment based on existing building alone, so Peaking Factors excluding stormwater allowance appropriate

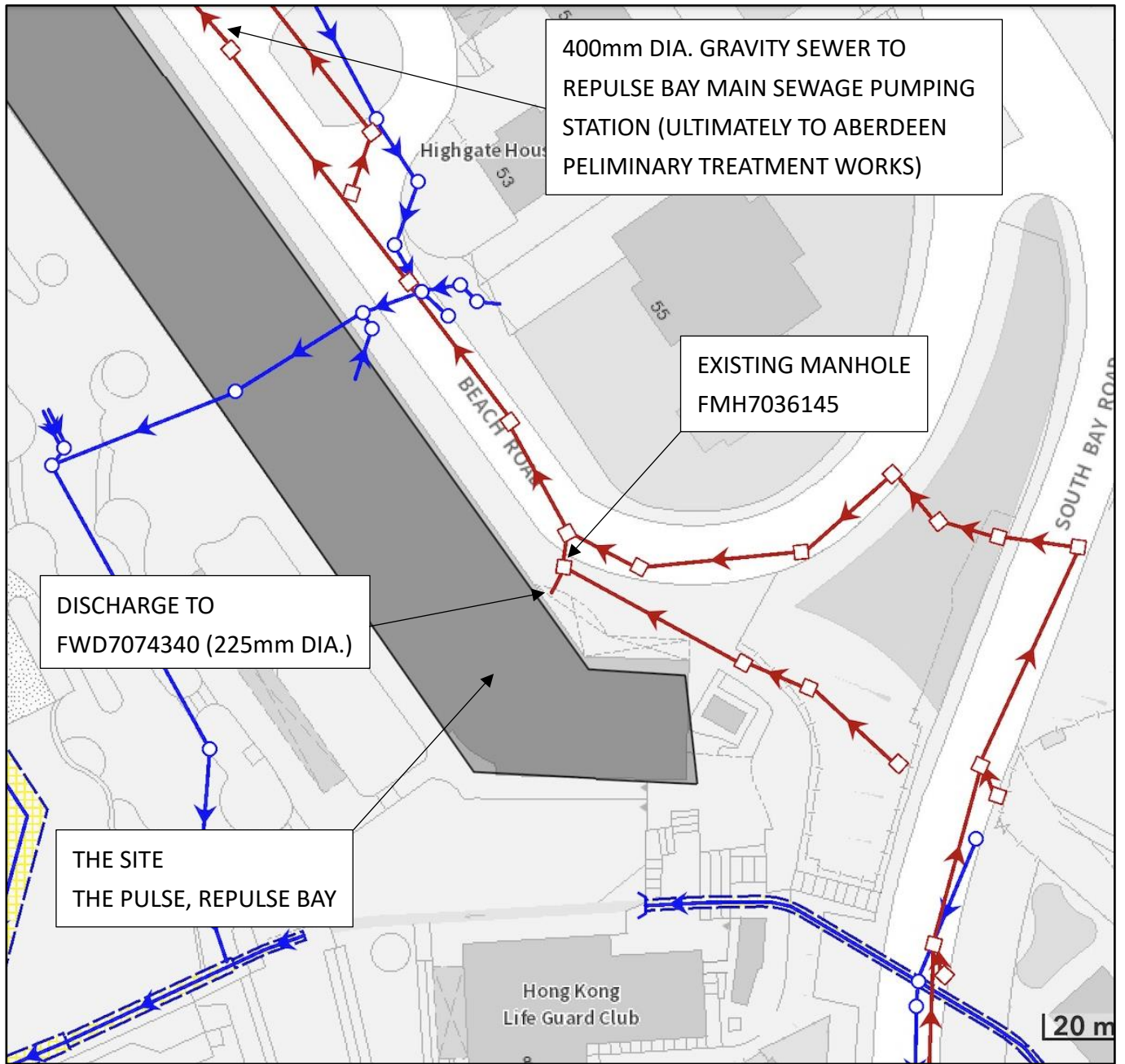
# Appendix B

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Figures



<p><b>Proposed Conversion of Part of the Pulse into Hotel in “Other Specified Uses (Beach Related Leisure Use)” and “Government, Institution or Community” Zones at No. 28 Beach Road, Repulse Bay</b></p>	<p><b>Site Location Plan</b></p>
	<p><b>Figure 1</b></p>



<p><b>Proposed Conversion of Part of the Pulse into Hotel in “Other Specified Uses (Beach Related Leisure Use)” and “Government, Institution or Community” Zones at No. 28 Beach Road, Repulse Bay</b></p>	<p><b>Existing Sewerage Connection</b></p>
	<p><b>Figure 2</b></p>