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CONSTRUCTION MANAGEMENT PLAN – PA/01948/20

PA/01948/20

Mellieha Bay Hotel

Date of Version Issue – March 2024	*iAS file Reference Number - 0659*
Report Version number – V2	*Revision number -02*

REVISION HISTORY

Version	Revision	Date	Purpose/Status
1	0	03/12/2021	Separate the CMP for the excavation and development from the demolition
1	1	18/07/2022	Updated the CMP to reflect the REV 5 concept design of the proposed development
2	0	25/03/2024	General amendments to reflect the appointed monitors, contractors and works methodologies.
2	1	22/04/2024	Submitted for approval
2	2	07/05/2024	Amended to include internal comments

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1 INTRODUCTION

This document is the Construction Management Plan (CMP) prepared for the proposed redevelopment of the existing Mellieha Bay Hotel, hereinafter referred to as 'the Scheme'. This CMP is being submitted on behalf of Mellieha Bay Hotel Ltd, hereinafter referred to as 'the Applicant'.

Two (2) full development permit applications were submitted to the Planning Authority (PA) in December 2019, PA/09876/19 for the demolition of the existing hotel and PA/01948/20 for the development of the proposed Scheme. The applicant submitted a Project Description Statement (PDS)[1] for the scheme in December 2019 and subsequently revised the Scheme in response to the screening letter.

Demolition of the existing hotel under PA/09876/19 commenced on the 15th of January 2024 and will be completed by mid-May 2024. The works included the demolition of the existing structures and their respective ground slabs with the use of long reach excavators and/or pneumatic hammer, the crushing and sorting of the demolition debris and its carting away.

The new hotel proposed under PA/01948/20, will take the form of a 360-guestroom hotel with amenities, including food and beverage outlets, conference facilities, outdoor swimming pools and recreational facilities (a tennis court, futsal pitch and children's play area).

2 ORGANISATION & RESPONSIBILITY MATRIX

Below is a table listing the key roles for the proposed Scheme.

Applicant	Mellieha Bay Hotel Ltd	Mr Brian Mizzi
Client Representative	Mellieha Bay Hotel	Mr Victor Pollacco
Project Manager	iAS Ltd	Arch. Peter Zammit
Project Architect	EM Architects	Dr Edwin Mintoff
Concept Architect	HKS	Arch. Luciano Mazza
Geotechnical Engineer	Geotech1	Dr Adrian Mifsud
Excavation Architect	Geotech1	Dr Adrian Mifsud
Construction Architect	EM Architects	Dr Edwin Mintoff
Fire Engineer	AP Services	Ing. Gaston DeGiovanni
Project Engineers	Scicluna & Associates	Ing. Joseph Scicluna
Project Supervisor	Resolve Ltd	Ing. Claude Farrugia
EIA Coordinator	Adi Associates Environmental Consultants Ltd	Mr Adrian Mallia
Stripping Contractor	n/a	Mr Dale Bonello
Asbestos Containing Material (ACM) removal	PT Matic Environmental Services Ltd.	Mr Oliver Fenech

[1] Adi Associates Environmental Consultants Ltd. 2019. PDS - Redevelopment of the Mellieha Bay Hotel, L-Gahdira, Il-Mellieha. December 2019

Demolition Contractor	Polidano Brothers Ltd.	Mr. Charles Polidano
Site Technical Officer	n/a	Not yet appointed
Excavation Contractor	Polidano Brothers Ltd.	Mr. Charles Polidano
Construction Contractor	n/a	Not yet appointed
Environmental Monitor	Ensure Limited	Mr. Adrian Mallia
Archaeological Monitor	JB Arch Ltd.	Mr. Jeremy Besancon

Table 1 - Organisation & responsibility matrix

3 CONSTRUCTION SITE ACCESS

Figure 1 - Property line and site boundary, shows the outline of the Scheme site and the outline of the application site subject of development permission application PA/01948/20. The Scheme site refers to the area subject of the redevelopment, which is located at L-Ghadira, on the northern shore of Mellieha Bay.

Vehicular access to and from the site is through a cul-de-sac from Marfa Road, leading to and ending within the applicant's property line, as indicated in **Figure 2 - Access to site**, below.

Figure 1 - Property line and site boundary

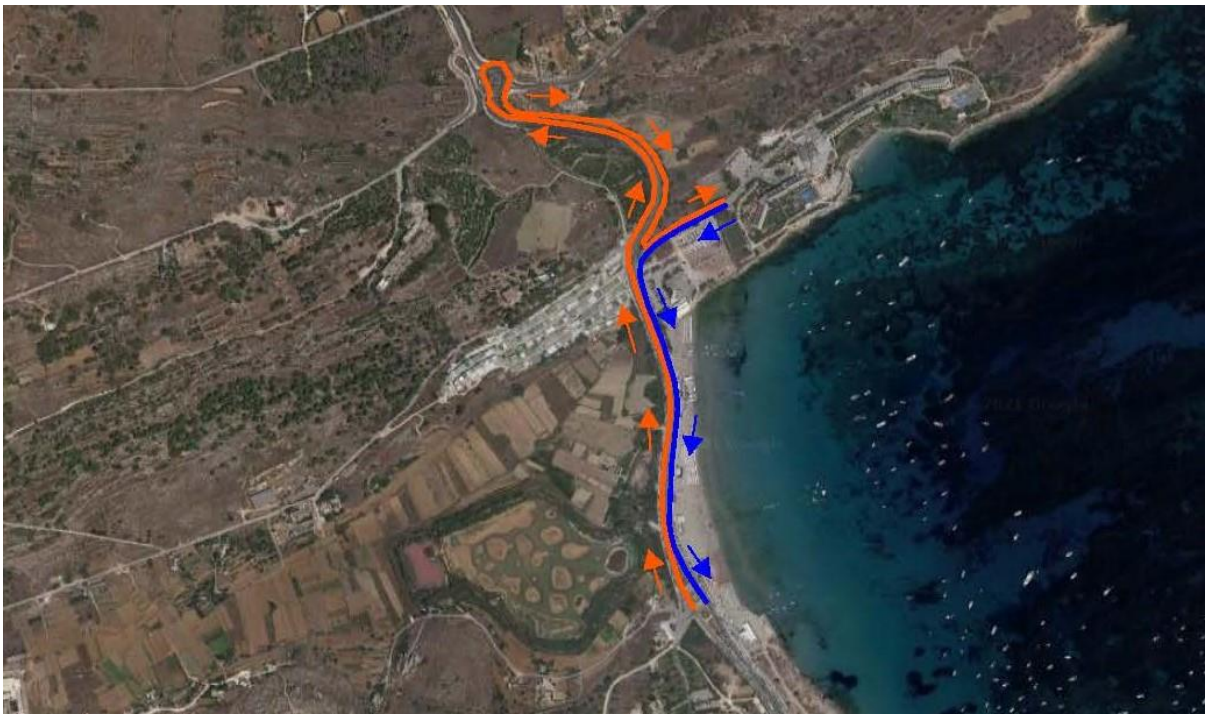


Figure 2 - Access to site

4 TRAFFIC MANAGEMENT

Site access entry and exit routes shall remain as existing, that is from the side road leading onto Triq il-Marfa. Two entry/exit gates have been installed, one for vehicular use, and another for pedestrians who will be entering the construction site through the designated passageway (see Figure 3 - Traffic Management).

Figure 3 - Traffic Management marks all the gate installation, together with the necessary signage at entry/exit points to site and from the arterial road.

Figure 3 - Traffic Management

5 DETAILS OF SITE HOARDING

The site has been cordoned off (as indicated in Figure 4 - Excavation Phase Site logistics Plan) to restrict pedestrian access into the site to the general public from the existing footpaths in the north-eastern rural areas and from the southern coast.

The hoarding consists of chain-link fencing around the site perimeter to secure a safe and lockable controlled access. The height of the chain-link fencing shall be in accordance with S.L.552.09 and which in no circumstance must be less than 2.5m high.

A knitted woven fabric net shall be installed on the south side of the property, in particular in the areas which are easily accessible to the Public from the foreshore.

A buffer zone (shown in Figure 4 - Excavation Phase Site logistics Plan) shall be marked where necessary to signal that neither access nor usage of the area is permitted. Such zone will not be accessible to vehicles, nor used as storage areas, during project execution. These buffer zones will be adequately marked on site and outlined to site personnel during site induction and toolbox talks.

6 TEMPORARY SITE OFFICES AND WELFARE FACILITIES

Temporary site offices and welfare facilities will be located on site within the site boundaries that are already disturbed.

7 STORAGE AREAS FOR MATERIAL

Figure 4 - Excavation Phase Site logistics PlanError! Reference source not found., illustrates the proposed areas designated as storage areas for materials. Storage areas will be limited to the site boundaries that are already disturbed and their exact details and configuration will be confirmed once the works contractor is engaged.

8 STORAGE AREAS FOR PLANT AND MACHINERY

Error! Reference source not found.Figure 4 - Excavation Phase Site logistics Plan**,** illustrates the proposed areas designated as storage areas for plant and machinery. Storage areas will be limited to the site boundaries that are already disturbed and their exact details and configuration will be confirmed once the works contractor is engaged.

Any plant or machinery to be used during the works will have a valid certification and will be operated only by competent personnel. Relevant certificates or skill cards will be provided.

A wheel washing facility is already installed in the vicinity of the main gate leading to Marfa Road.

Figure 6 - Preliminary site logistics plan, illustrates a preliminary site logistics plan, indicating proposed locations for tower cranes and the internal site traffic routes during various stages of the works. Further details will be made available once the works contractor is engaged.

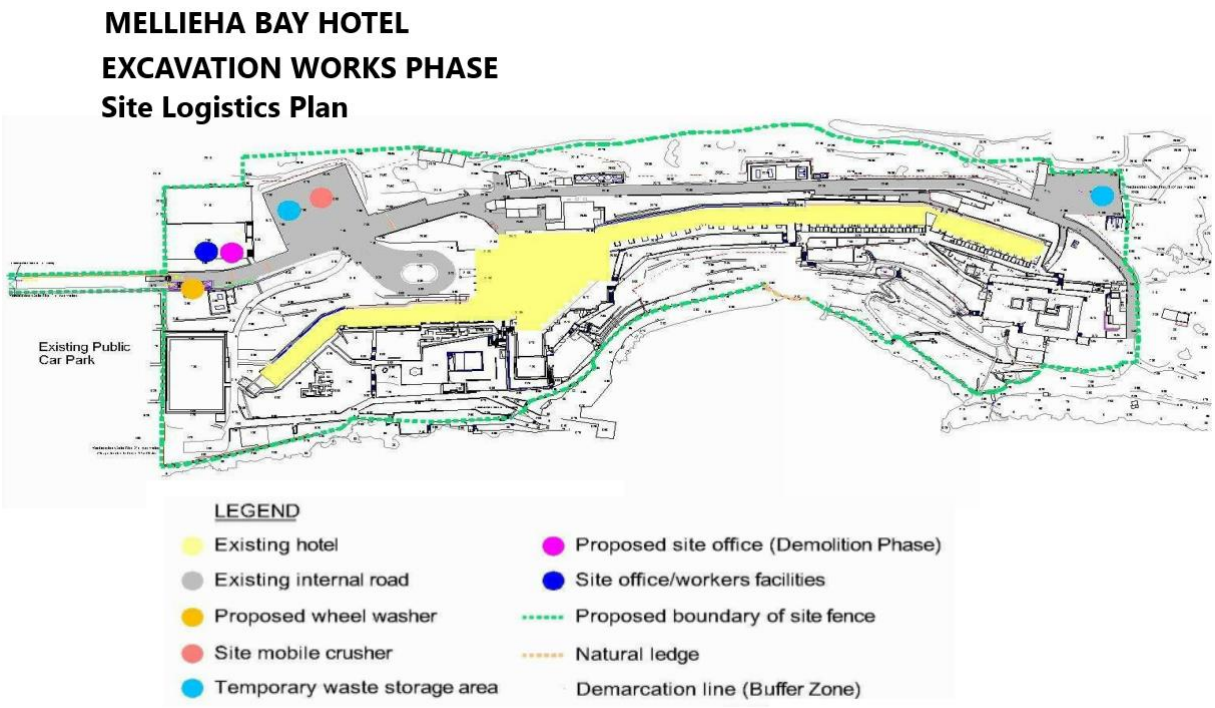


Figure 4 - Excavation Phase Site logistics Plan

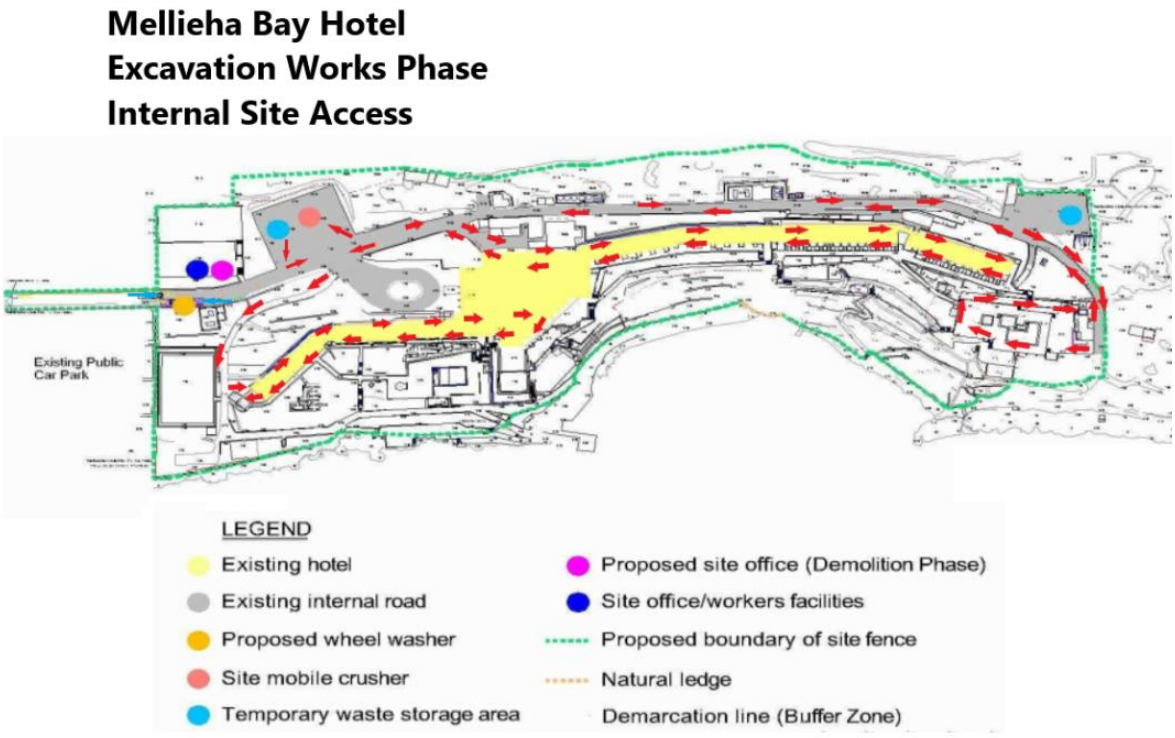


Figure 5 -Excavation Phase Internal Site Access

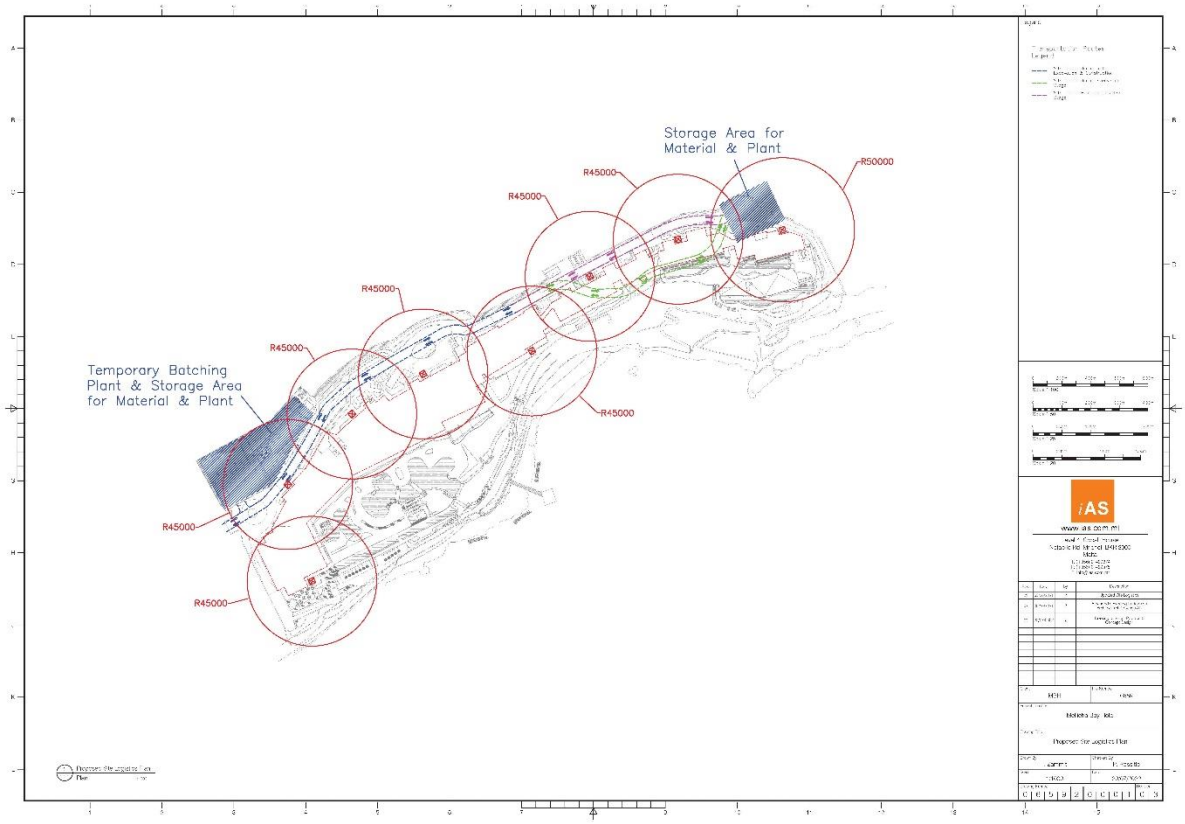


Figure 6 - Preliminary site logistics plan

9 WORKING HOURS

Working hours will be in line with local legislation and permit conditions. Working hours may vary by time of year and in respect of environmental or other constraints.

10 PROGRAMME OF WORKS

The Applicant will be procuring these works in several works packages as indicated below:

- Oversite, general excavation and associated ground works;
- Civil works including all construction works;
- Building services including all mechanical, electrical and extra low voltage works;
- Finishing works

Works covered by PA/1948/20

The proposed Scheme contemplates a number of blocks that are represented in Figure 7 - Block Referencing and **Figure 8 - South Elevation**, below. The works for the proposed scheme will be carried out in two (2) phases, namely:

- Phase 1 (PA/09876/19)
    - Demolition of existing Hotel (Presently being finalised)
- Phase 2 (PA/1948/20)
    - Oversite clearance and general excavation, in conjunction with the associated ground works across all the site
    - Substructure of all the blocks.
    - Construction of all blocks.

The envisaged programme of works is to finalise the demolition of the old complex in its entirety and to clear the site before embarking on the excavation (with an overlap in the two Stages). We are presently finalising the substructure and structural designs, but in the meantime, we are aiming to start excavating the site in line with the excavation plan included in this document. Updates to the excavation works method statement and the CMP will be submitted for any future works not covered by this document for which clearance from authorities is required.

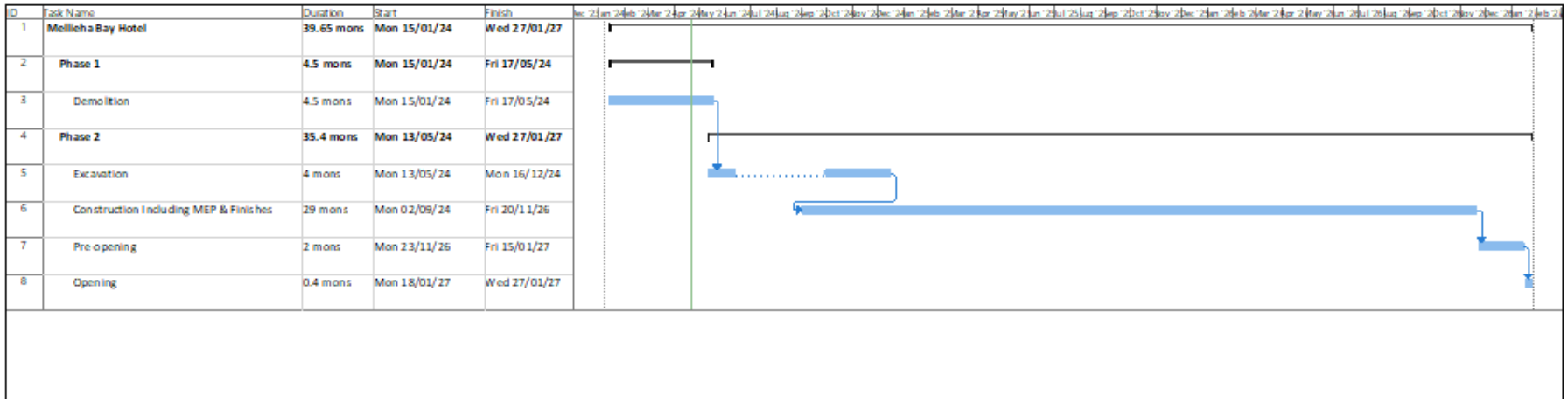
For a more detailed explanation on the excavation works methodology, please refer to **Error! Reference source not found.**.**Error! Reference source not found.**

Given the extent of the site it is envisaged that there will be an overlap between the construction and the excavation work packages, with the construction following the progress of the excavation works.

Figure 9 - Programme of worksFigure 9 - Programme of works**Error! Reference source not found.**, illustrates the proposed sequencing of the works related to the two (2) phases mentioned above. The exact flow of the works will be provided once the construction contractor has been appointed.

Figure 7 - Block Referencing

Figure 8 - South Elevation



ID	Task Name	Duration	Start	Finish
1	**Mellieha Bay Hotel**	**39.65 mons**	**Mon 15/01/24**	**Wed 27/01/27**
2	**Phase 1**	**4.5 mons**	**Mon 15/01/24**	**Fri 17/05/24**
3	Demolition	4.5 mons	Mon 15/01/24	Fri 17/05/24
4	**Phase 2**	**35.4 mons**	**Mon 13/05/24**	**Wed 27/01/27**
5	Excavation	4 mons	Mon 13/05/24	Mon 16/12/24
6	Construction Including MEP & Finishes	29 mons	Mon 02/09/24	Fri 20/11/26
7	Pre-opening	2 mons	Mon 23/11/26	Fri 15/01/27
8	Opening	0.4 mons	Mon 18/01/27	Wed 27/01/27

Figure 9 - Programme of works

11 PROTECTION MEASURES FOR RETAINED BUILDINGS, STRUCTURES AND LANDSCAPES

Further to consultation with the Superintendent of Cultural Heritage (SCH)[2] the marble plaque commemorating the opening/foundation stone of the existing hotel has been salvaged and will be integrated into a display installation with period photos and newspaper cuttings illustrating the design and history of the original hotel.

In respect of the existing hotel buildings / structures, including built elements within the grounds, which may incorporate stones formerly part of the Fedeau / Qassisu Battery, any removal will be supervised by qualified archaeologists, reporting to the SCH, and any cultural heritage artefacts removed will be appropriately recorded and salvaged, where possible. The restoration and exposure /showcasing of the Fedeau / Qassisu Battery, will be undertaken having regard to the restoration method statement prepared by Prof. Conrad Thake[3], and under the supervision of qualified archaeologists / restoration architects, reporting to the SCH. The details to address any protection to the battery during the demolition and construction phases will be prepared once the works contractor/s are engaged.

Provisions have been made for the archaeological excavation of the known ancient burial site along the road at the north-eastern perimeter of the hotel property. These works have been finalised under the supervision of a qualified archaeologist, reporting to the SCH. Further details will be submitted once the archaeological studies are completed, and the works contractor is engaged.

Figure 10 - Landscape areas to be retained and areas to be excavated below, illustrates the areas where existing vegetation is being retained and areas where existing vegetation is proposed to be removed. Any existing protected species will be retained or relocated depending on location with respect to the landscaping proposal. Indigenous species will be proposed as part of the soft landscaping. Further details will be made available once the works contractor is engaged.

Trees and shrubs within the area to be excavated have already been removed and relocated / destroyed in accordance with an environmental permit issued by the ERA. Transplanted specimens are either being maintained in a nursery on site for eventual replanting as part of the new hotel's landscaping scheme, or have been transplanted in an area as part of an afforestation scheme in the vicinity of the hotel and within the applicant's site boundary.

[2] Superintendent of Cultural Heritage. 2020. PA/09876/19 - 36a and PA/01948/20 - 38a
[3] Prof. Conrad Thake. 2021.Restoration Method Statement. Remains of Fedeau/Qassisu, Coastal Battery at ta' Qassisu, Ghadira, Mellieha Bay

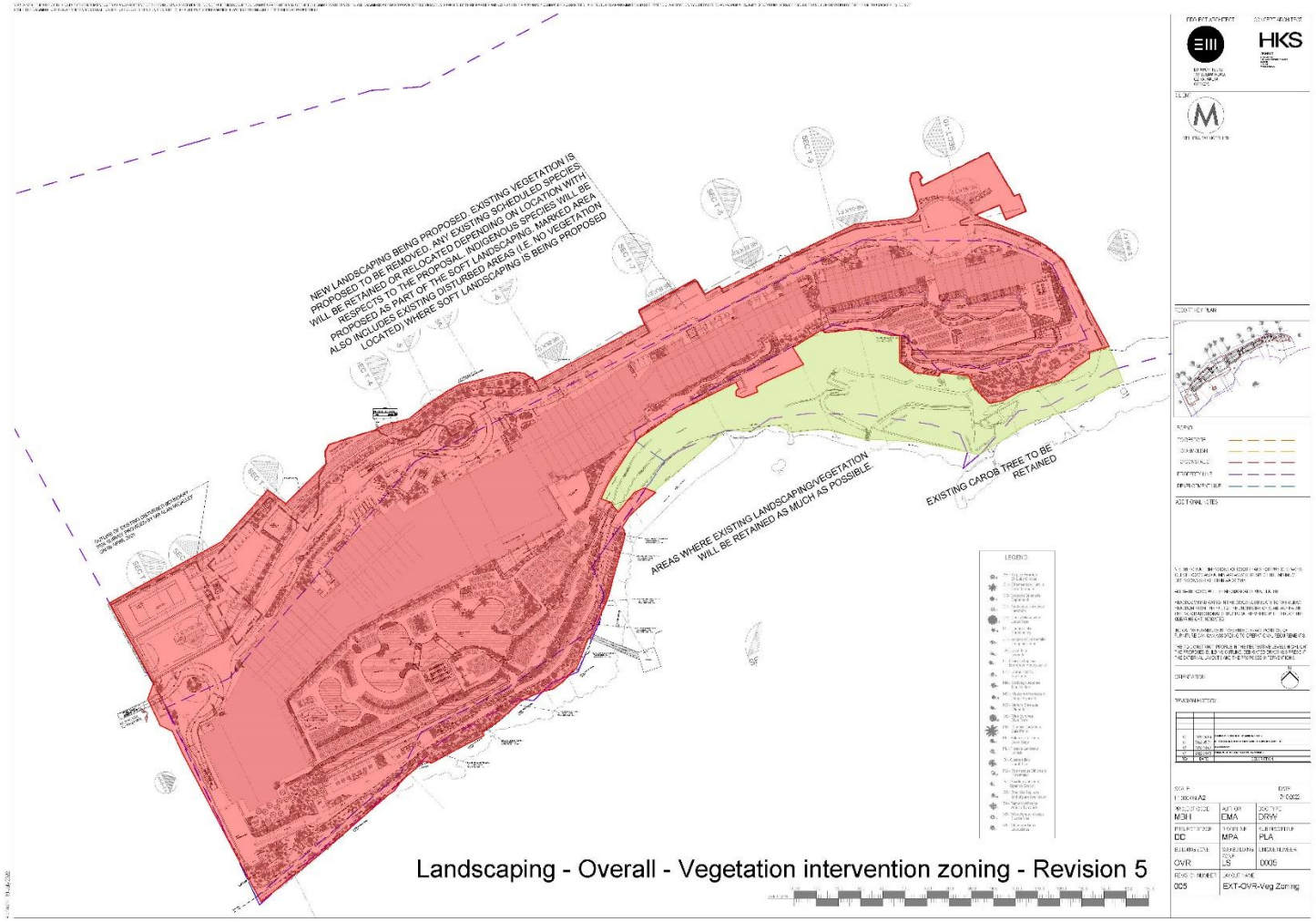


Figure 10 - Landscape areas to be retained and areas to be excavated

12 Works Methodology

12.1 Identification of risks involved

- Before any works are carried out electricity supplies will be identified, checked, and isolated.
- Any underground services must be detected, disconnected and/or allocated prior to commencement of demolition works.
- An asbestos survey report had been prepared by the clients' consultants and all visible asbestos has been removed by third party contractors. In the event that buried asbestos containing materials is encountered, works in this area will be stopped immediately and the matter reported to the environmental monitor and measures taken to remove the asbestos safely from the site and delivered to appropriate facilities licensed to accept this waste. Asbestos removal will be undertaken by appropriately licensed contractors.
- All appropriate precautions must be taken to ensure the safety of workers prior to the commencement of works to remove any danger that the excavation works may pose.
- Any temporary support system shall be certified by a relevant qualified person commissioned by the contractor.
- Fall protection systems must be erected around any stairwells, stairs, shafts and any other edges and openings where any person may fall a distance liable to cause personal injury. All fall protection systems must be robust, of good construction and of adequate strength for the purpose for which they are to be used. Fall protection should be regularly checked and maintained to ensure its strength and effectiveness.
- Ground openings shall be adequately covered, and covers must be secured to ground against any possible unwanted displacement.
- When weather conditions may put workers in a dangerous situation, all work at height must be suspended. Wind force must never put workers at risk.
- Material and tools shall be placed away from edges.
- Temporary lighting systems shall be installed in areas where natural light is not sufficient.
- Scaffolds or temporary platforms shall be certified as safe to work on by a competent person. Scaff tags or other certificates (as appropriate) will be provided, and workers instructed on the correct use of such support systems.

- Glass or similar hazardous materials shall be removed from the site.

12.2 DUST MITIGATION MEASURES

- Water misters

During the excavation works, water misters and/or water bowsers shall be used as a dust suppression measure to control the dust particle dispersion. Such misters shall be supplied with the temporary water that shall be made available for the execution of the works.

- Wheel washer

A wheel washing facility (as per Figure 11 - Wheel washing facility & Figure 12 - Wheel washing facility, below) is already installed at the main exit route for the cleaning of all heavy vehicles exiting the site to limit dust dispersion onto the arterial roads. The location of the wheel washing facilities is indicated in Figure 4 - Excavation Phase Site logistics Plan

All loaded trucks leaving the site will have to be covered before leaving the construction site. No trucks will be allowed to exit the site without the necessary material covers.

A site logistics plan has been prepared and attached with this document (See Figure 4 - Excavation Phase Site logistics Plan) to include all the relevant services/facilities that shall be installed/designated to specific works.

Further details are available in 15-Appendix B – Excavation EMMS.

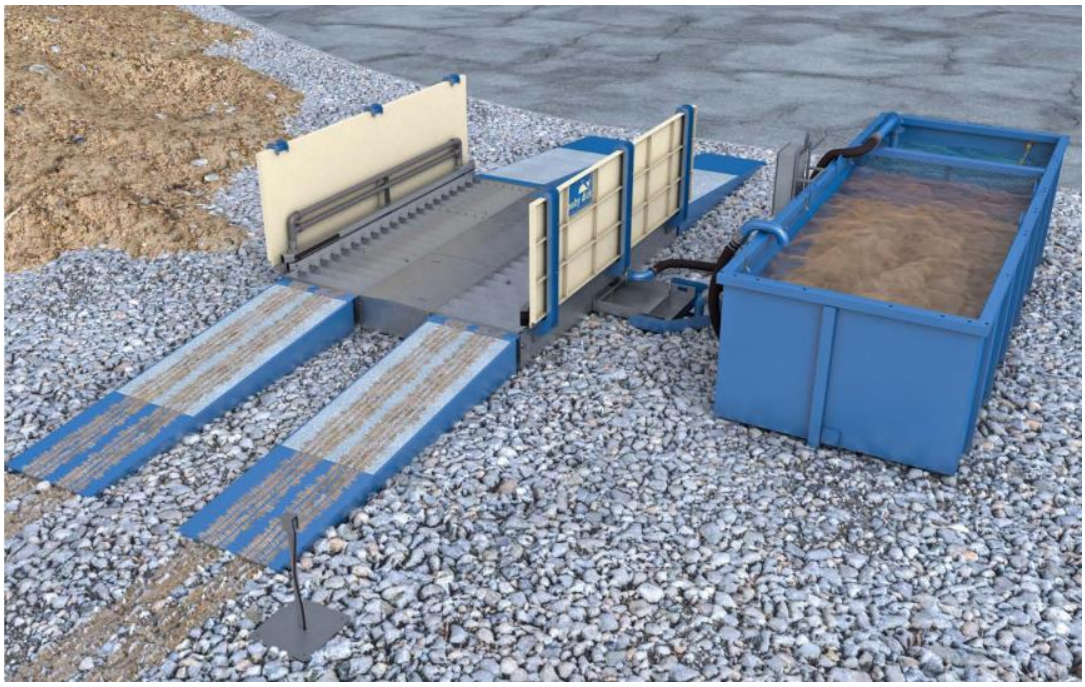


Figure 11 - Wheel washing facility

Figure 12 - Wheel washing facility

12.3 Works Method Statement

The general sequence of works may be summarized as follows:

12.3.1 Preliminary Items

- Early formulation and submission for approval of preliminary works associated with formulation of works programme, traffic management plan, environment management plan;
- Carry out early site investigation / trial pits etc., identify and establish any ulterior action / works necessary;
- Photographic evidence of the site area;
- Achieve approval of PW, EMP and TMP by the PS;

12.3.2 Site Mobilisation

The Contractor shall endeavour to achieve early site mobilization, including organization of contractor's site compound, site offices and storage areas, as well as installation of temporary facilities such as installation of fencing works, etc. Subject to approval of the logistics plan, and receipt of instructions by the PS to proceed with the works, the Contractor shall mobilize with installation of traffic diversion signs and road barriers with eventual diversion of vehicular traffic, thus enabling actual site works to commence.

12.3.3 Site Clearance

The contractor shall immediately proceed with clearance of topsoil and agricultural soil. Works will proceed from the Western side towards the Eastern side of the proposed development. The soil to be removed will be retained and reused on site for the new landscaping scheme. The removal of the soil should be conducted when the soil is dry so as not to affect its structure.

The topsoil will be sifted and temporarily stored on existing agricultural land located adjacent to East side of the proposed development, within the property boundary of the Mellieha Bay Hotel following the steps below:

- Soil is loaded into tipper trucks by means of a mechanical excavator.
- It is then transported and deposited in the sieving area.
- Another mechanical excavator shall load this material into the hopper so that the soil can be sieved.
- Through the sieving, large boulders in the soil are removed whilst the resultant fine soil is stored for future reuse.
- Boulders are then either stored on site or transferred to a recycling site for future use in dry stone wall building.

Figure 13 - Soil sifter

12.3.4 Excavation

The excavation contractor will execute the works in line with the excavation method statement (refer to Appendix A).

The Contractor shall have the below equipment available on site and shall endeavour to provide supplementary plant / equipment as deemed necessary to satisfy work logistics and the works programme:

- One Terrain leveller;
- One Rotary machine;
- Four Pneumatic hammers;
- Four Bucket excavators;
- Crushing equipment;
- One Earth mover

Figure 14 - Terrain Leveller

Figure 15 - Earth Mover

Figure 16 - Bucket Excavator

Figure 17 - Rotary Cutter

Figure 18 - Pneumatic Hammer

13 LOCATION OF DISPOSAL FOR MATERIAL FROM EXCAVATION

It is intended to recycle some of the crushed demolition material in the new build (to be used as backfill).

While aiming to minimise excavation waste and recycle material, dumping will only be done in an authorised dumping site in Lapsi, Quarry no HM 33 (see Figure 19 - Route to registered quarry HM-33).

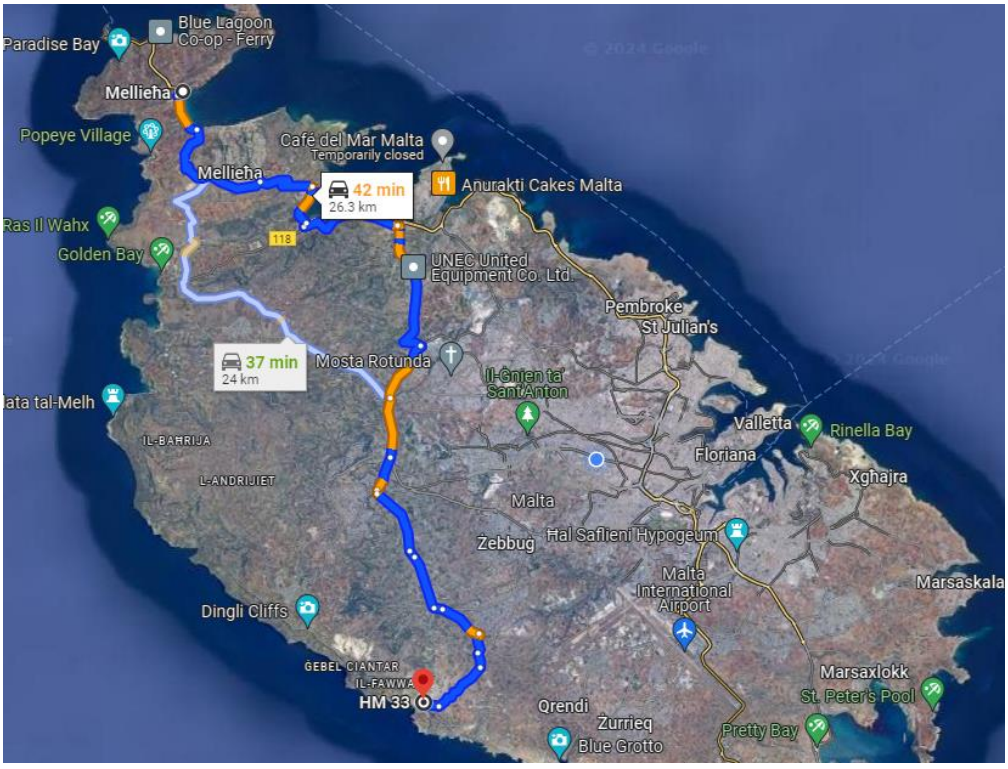


Figure 19 - Route to registered quarry HM-33

14 APPENDIX A – EXCAVATION WORKS METHOD STATEMENT

Redevelopment of Mellieħa Bay Hotel

Job no.: Rep. no.5

Excavation Works Method statement

Dr. Adrian Mifsud

BE&A(Hons), MSc(Lond), PhD(Melit), DIC

Geotechnical Engineer

Geotech1 engineering the ground

May 2024

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1 Terms of reference and introduction

This works method statement identifies the main issues related to the excavation at the site of the previous Mellieħa Bay Hotel, at Għadira, l/o Mellieħa Malta, for the purposes of redevelopment and reconstruction of the same hotel. The proposed excavation is shown in Figure 1-1 below.

Figure 1-1 – proposed excavation plan (levels are relative to mean sea level)

The site is located in a complex geological setting, rendered more challenging by the presence of several fault lines that traverse the sloping terrain forming the shoreline at this location. Extensive ground investigation work has been carried out to identify this geological complexity, including the drilling of more than 40 boreholes, several trial pits, in-situ tests (geophysical down-borehole and geophysical scanlines) a very extensive programme of laboratory tests on several layers of the encountered stratigraphy, as well as monitoring programmes to determine the ground water regime and possible natural displacement of the terrain with time.

The site earmarked for excavation is not surrounded by the property of third parties, other than the public carpark in one particular zone to the south-west boundary of the site. This car park consists of a single-level paved public area, and there is no construction of the type that would otherwise be required for a multi-storey car park. Structures in this case are limited to a small retaining wall holding the edge of the carpark and its five-course masonry boundary wall. The ground below this retaining wall has already been excavated in the past. The retaining structures fall outside the designated affected zone of the excavation, as shown in Figure 1-3 and Figure 1-4 below.

Other than this simple structure, the proposed excavation is not envisaged to affect any other constructions in the immediate vicinity.

Figure 1-2 – Current state of the south-western boundary of the site, abutting the public car park

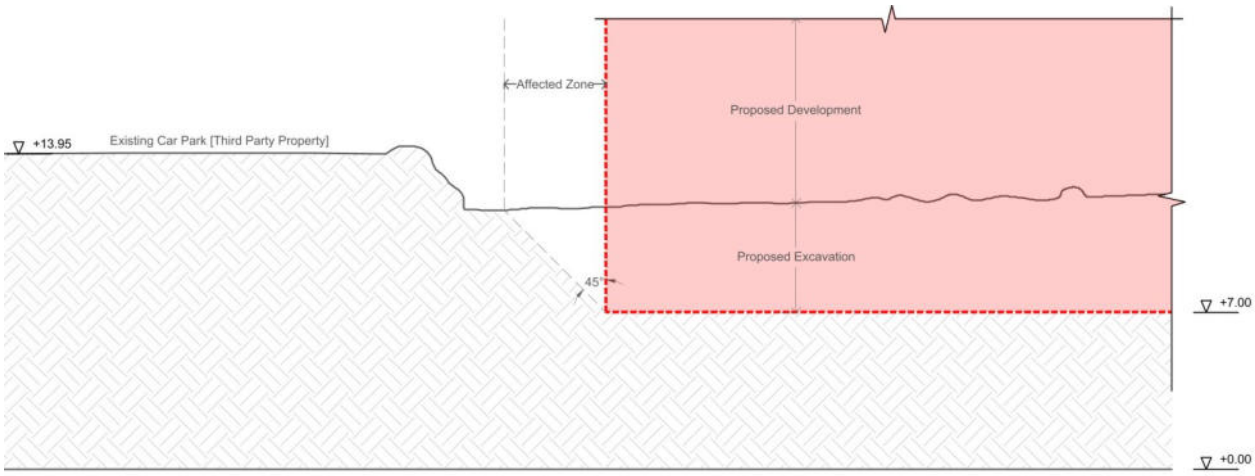

Figure 1-3 – Section 1 through excavation for Block A, close to existing car park, showing affected zone

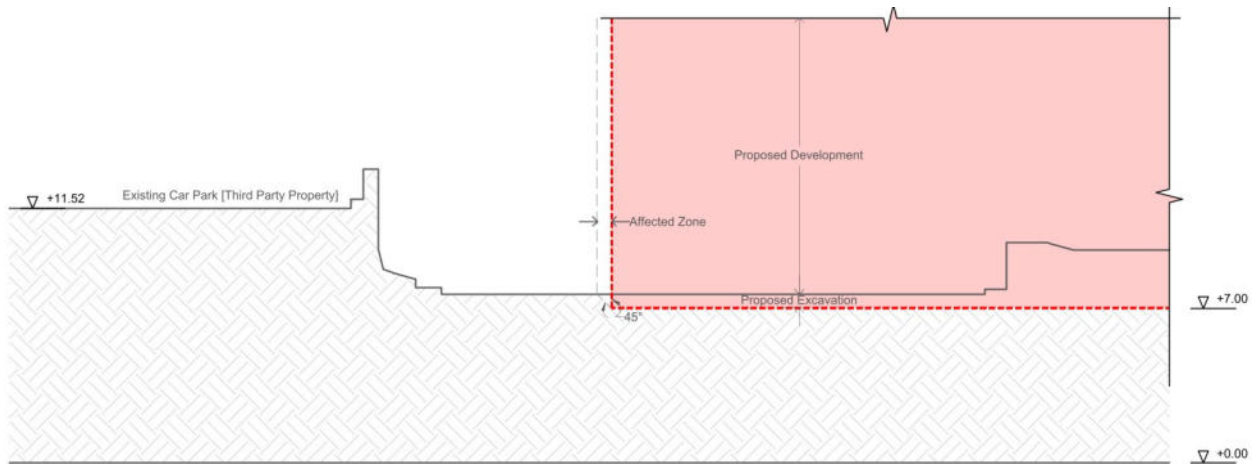

Figure 1-4 – Section 2 through excavation for Block A, close to existing car park, showing affected zone

The main issues related to excavation and that are of concern are those pertaining to excavation and slope stability. This is relevant for the natural slopes and for the changes in level close to those areas that will be used as vehicle throughfares during the same excavation and construction phases of the hotel. Excavation stability is therefore relevant for health and safety reasons and for preservation of the existing natural slopes.

The excavation will be carried out to several different levels, as dictated by the proposed plan layout of the redeveloped hotel, thus creating several abrupt changes in level within the existing terrain. These changes in level have been studied in detail, in relation to a three-dimensional stratigraphic model of the terrain that was created specifically for this purpose. This stratigraphic model was built using the information from the various ground investigation initiatives undertaken over the past four years. These cross-sections are reproduced in the appendix to this document, showing how each zone of the site has been studied in both transverse and longitudinal directions.

The complexity of the geology and geomorphology in the area is very evident in these cross-sections. Almost all formations of the Maltese sequence stratigraphy have been identified in this particular site, as outlined in Table 1-2 below. Some of these materials are clearly rocks, while others are clearly soils, as shown in Table 1-1 below. In particular, the Upper and Middle Globigerina limestones present at this location are borderline cases between soil and rock.

The diverse nature of these materials implies that excavation within is likely to present a range of geotechnical issues that require different strategies of mitigation, in accordance with the perceived level of terrain fragility and in relation to the required change in level at the boundary of the excavation, as this is being developed in a gradual manner during the entire excavation process.

Table 1-1 – Soil/rock classification on the basis of the amount and types of tests done

Stratum	Upper Coralline Limestone formation	Blue Clay	Upper Globigerina Limestone			Middle Globigerina Limestone	Lower Globigerina Limestone	Lower Coralline Limestone formation
Alias & colour code	UCL	BC	UGL-1	UGL-2	UGL-3	MGL	LGL	LCL
Rock	Yes		Mostly a weak rock with upper part generally weathered to a soil-like material		A weak rock with some soil sections		Yes	Yes
Soil		Yes		Mostly a soil with some weak rock sections				
Rock/Soil mix						Yes		

The sections presented in Appendix A show that as this excavation is developed, both rocks and soils will be encountered, often in stratigraphic sequences in which the weaker soils may underlie the stronger rocks.

The geomorphology of the site also suggests that fault lines are present across the site, with appreciable downthrow in some cases. In such situations, the ground materials on either side are often extensively sheared and fissured such that unravelling is then possible during excavation.

Table 1-2 – List of different strata identified during the investigation

Stratum	Alias & colour code	Depositional Environment	Origin	Type
Man-made material	MM	Man-made	Holocene	Mixed, concrete, limestone fill or soil fill, all shapes and sizes
Quaternary reddish sand deposits	Q	Alluvial/Colluvial	Quaternary - Pleistocene	Sands, gravels, cobbles in lithified silt and clay matrix
Upper Coralline Limestone formation	UCL	Shallow reef	Miocene – Late Tortonian to Early Messinian	Moderately weak to moderately strong mudstone, here fractured (and sometimes indurated) by fault action
Blue Clay	BC	Deep Pelagic	Miocene – Langhian to Tortonian	Stiff overconsolidated high plasticity clay - mainly weathered surface layer. Relatively compressible
Upper member of the Globigerina Limestone formation	UGL-1		Miocene – Burdigalian to early Langhian	Very weak fractured fine-grained rock
	UGL-2			Stiff, lightly cemented clayey silt Relatively compressible
	UGL-3			Very weak fractured fine-grained rock
Upper Phosphorite Conglomerate Bed	UPCB		Burdigalian	Thin bed of hard pebbles/nodules in weak rock matrix
Middle member of the Globigerina Limestone formation	MGL		Miocene – Aquitanian to Burdigalian	Very weak rock (generally fractured) May be relatively compressible
Lower Phosphorite Conglomerate Bed	LPCB		Aquitanian	Thin bed of hard pebbles/nodules in weak rock matrix
Lower member of the Globigerina Limestone formation	LGL		Miocene – Aquitanian	Moderately weak packstones, well cemented
Lower Coralline Limestone formation	LCL	Shallow reef	Oligocene - Chattian	Moderately strong limestone

In this regard, the following situations are envisaged to be encountered as the site is being excavated The table below highlights the pertinent geotechnical issues and the proposed mitigation measures.

Table 1-3 – Potential situations encountered during excavation, the related geotechnical issues and the proposed mitigation measures.

Potential situation	Relevant formations / layers	Relevant geotechnical issues	Proposed mitigation measures
Excavation in superficial deposits	Man-made fill, loose quaternary deposits	Issues of face unravelling and soil collapse	Removal of surficial deposits prior to excavation, generally creating a slope profile having an angle of 30° to 40° to the horizontal
Excavation in fissured clay	Blue Clay formation, middle layer of the UGL	Clay and silty clay deposits are often intensely fissured in proximity of major fault lines. The stress regime around the fault line often causes the resultant fissures to be unfavourably inclined to the excavation face, if this is parallel or sub-parallel to the fault line. This then creates the possibility of wedge failure during the excavation process, which is excacerbated by efficient drainge paths created by the same inclined fissures. This process is time dependent as capillary suction within the clay is neutralised by pore pressure equilibration via seepage through the same fissures.	The presence of such fissured clay needs to be established by first excavating exploratory trial pits at the outset of the excavation process. These will need to be inspected by the engineer in charge. If fissured clays are identified, the orientation of the fissures is checked and then compared to the alignment of the proposed excavation faces. If the possibility of wedge failure is identified, the possibility of creating sloping sides to avoid the creation of such wedges is to be studied. If this is not possible, the face may need to be bolted and shotcreted in successive intervals as directed by the engineer in charge.
Excavation in stiff clay	Blue Clay formation, middle layer of the UGL	Although such clays may be fissured, the intensity of such fissures may not be sufficient to be of concern. In such cases, the natural deposit is most likely to sustain a vertical face in the short term, but less so in the long term, when the project is completed and is in operation. This is the result of the same pore-pressure equilibration that changes the effective stress regime in the clay from the undrained to the drained state, lowering its factor of safety in the long term. In this case, however, the groundwater seepage necessary to bring about this equalisation is much less efficient, and therefore the available time window of temporary face stability is much longer.	The presence of such clay deposits needs to be established by first excavating exploratory trial pits at the outset of the excavation process, as directed by the engineer, based on the information available from the ground investigation. The exposed clay outcrops, if proven, will need to be inspected by the engineer in charge. The thickness of the clay layer is established, and measures of undrained strength are taken by penetrometer of pocket shear vane, following which the undrained strength is estimated. Using this figure, the safe height of a vertical cut in this material can be estimated. If this is seen to be sufficient, no further action is required, and the excavation can proceed, albeit with continuous monitoring to verify the assumptions taken. If the undrained strength is such that the required vertical cut is of dubious stability, then the engineer can consider the possibility of creating sloping sides for the excavation. The angle of the face will be determined by slope stability calculations. If this is not considered sufficient, the excavation may need to be bolted and shotcreted in successive intervals as directed by the engineer in charge.
Excavation in weathered rock	UCL, UGL-1, UGL-3, MGL	Where weak rocks are present close to the existing surface, these are expected to be weathered, implying a reduction in strength and more intense fissures These may therefore create situations of unstable wedges or planes of rock which might cause injury to the people working below	These situations will need to be identified by the engineer in charge, on close inspection of the rock faces, as these gradually exposed by excavation. Once typical unstable wedges are identified, a decision will need to be taken to either disengage these, or else to bolt/secure in place, using small diameter steel bolts and plates. A decision may also be taken to incorporate a steel mesh below the bolt plates, such that the ensemble can be subsequently shotcreted to impart more cohesion to the face as a whole.
Excavation in intensely fissured rock	UCL, UGL-1, UGL-3,	The rock in such zones of natural alteration is generally harder but also very intensely	These situations will need to be identified by the engineer in charge, on close inspection of the

close to fault lines		fissured. This often creates situations where small pieces of rock can be dislodged. Although intensely fissured, rock in such situations also possesses a degree of interlock, which inhibits disintegration	rock faces, as these gradually exposed by excavation. Once typical fissured zones are identified, a decision will need to be taken to either disengage these, or else to shotcrete these. A decision may also be taken to incorporate rock bolts to secure the rock mass in place, using small diameter steel bolts, mesh and plates, prior to shotcreting.
Excavation close to existing boundary wall of car park	UCL	The boundary wall (5 courses high) is supported by a masonry retaining structure that is some 5 to 9 courses high. This is likely to create intense stresses at the outer exposed face, where the underlying quaternary deposits are eroded and recessed away from the face. This face is already excavated, well below the toe of the existing retaining structure. The proposed works will involve some further excavation to a very limited depth (note exceeding 1.5m), probably exposing a face of fissured UCL. The fractured nature of the expected rock formation may lead to the development of unstable wedges and unravelling of the fractured rock surface.	Since excavation in this area is expected to be minimal, intervention will be limited to shoring the exiting wall by a concrete cast, meant to fill the gap below the existing wall and to create a buttress for the rock formation in this area. The area will be inspected by the engineer in charge, who may request the excavation of preliminary trenches in proximity to the site boundary and the carpark wall. These trenches will then be used to construct concrete buttresses below the existing wall, which these are still supported by the adjacent rock. Once the concrete buttresses are in place, the remaining rock in between the trenches can be excavated to the designated level.
Excavation close to existing natural slope (Block D)		The area in front of Block D and part of Block E1 will involve excavation that is very close to the existing natural slope, overlooking the small cove and beach. The geology in this location is expected to be rather complex as the various layers are rotated and shifted relative to each other by fault action The	The main concern here is ensuring the stability of the limited section of ground material remaining between the natural profile that currently exists on the outer side and the vertical face of the excavation on the inner side. This block of soil and rock can be reinforced by bolting and micropiling (if deemed necessary), prior to commencement of excavation in this area. The extent of the intervention and its methodology of implementation will need to be determined by the engineer in charge after the natural formations are exposed and after some trial trenches are excavated perpendicular to the internal face of the excavation within the zone designated for excavation.

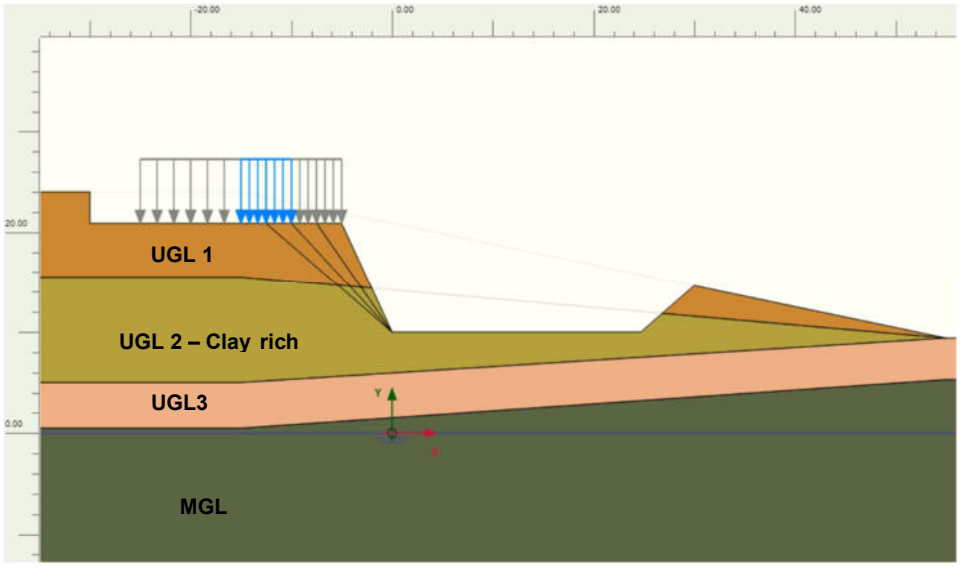

Figure 1-5 – Preliminary model used to assess slope stability at the back of the excavation indicated in yellow in Figure 1-1 above

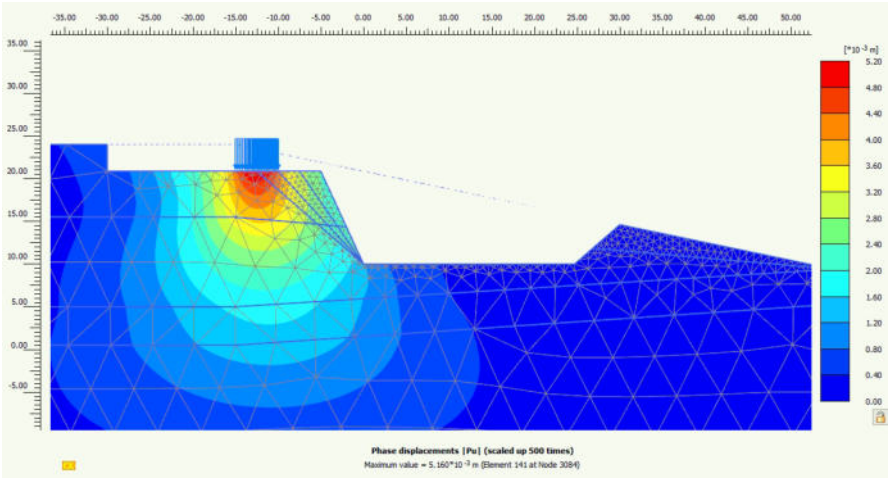

Figure 1-6– Preliminary model used to assess slope stability at the back of the excavation indicated in yellow in Figure 1-1 above

Some preliminary slope stability calculations (see Figure 1-5 above) have shown that in most cases, the slope can be rendered stable with an excavation face inclined at 65° to the horizontal and with heavy vehicles being kept away 5m from the edge of the excavation. When the depth of the excavation exceeds 10m heavy vehicles would need to be kept some 6m away from the edge.

2 Works methodology

The proposed sequence of works, for the purposes of excavation, shall proceed as follows:

The excavation will be divided into distinct phases as shown in Figure 2-1 below.

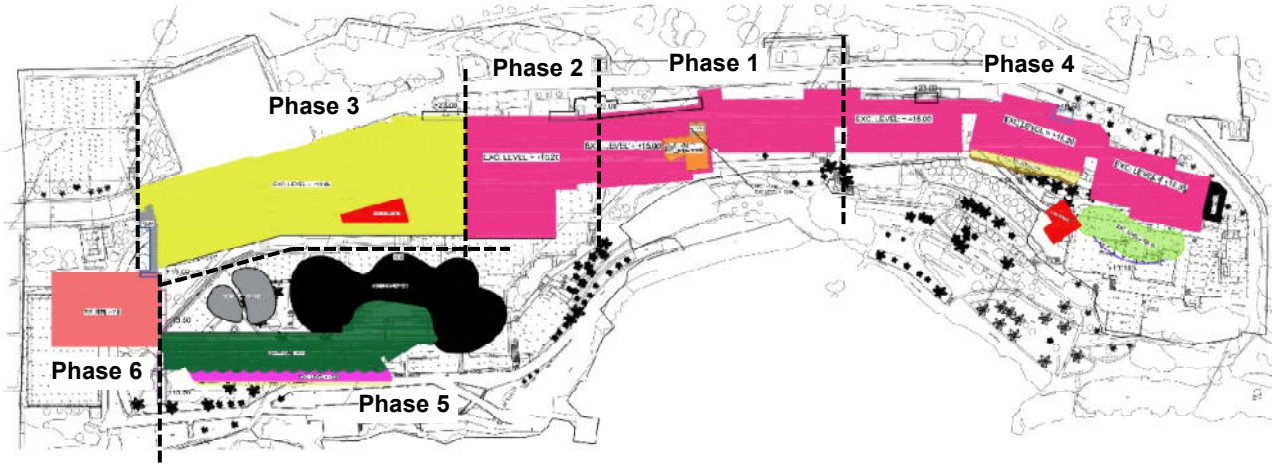

Figure 2-1 – Excavation phasing

For each phase the following procedure is to be adopted:

1) The main starting point of the excavation will be identified, and the routes of excavation plant and tipper trucks are established, according to the plan shown in Fig XXX

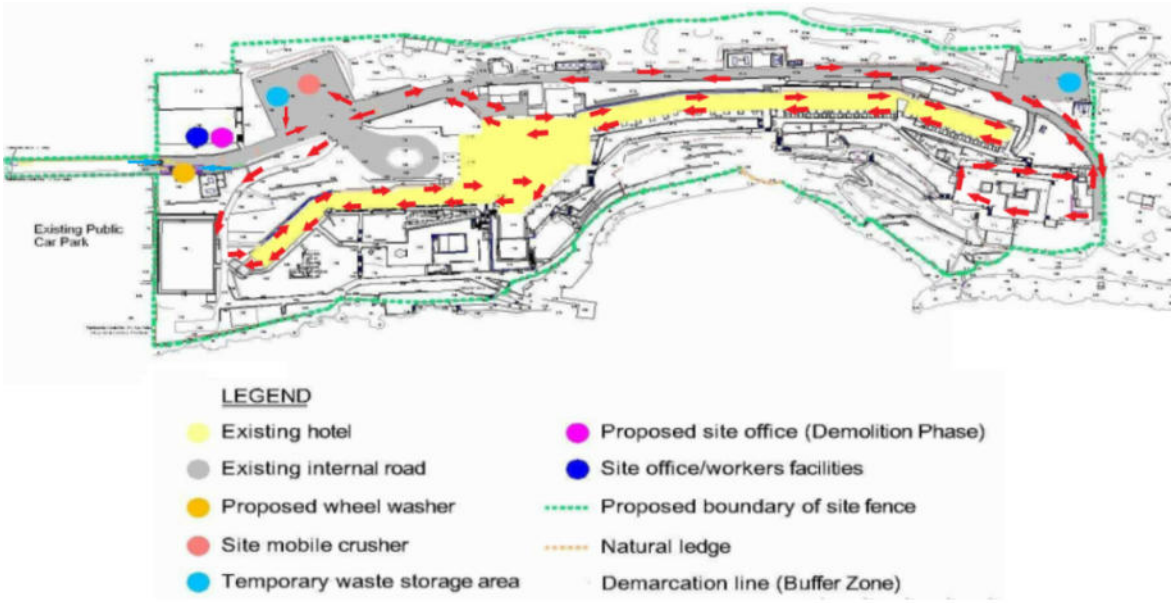

Figure 2-2 – Proposed circulation plan

2) The excavation will proceed in the centre of each identified area, such that the natural rock and soil formations are well exposed prior to reaching the boundary of each designated excavation zone.

3) The freshly exposed excavation faces are to be inspected by the engineer in charge, to determine the need or otherwise of stabilization interventions, as outlined in Table 1-3 above

4) At this early stage, the extent and location of investigative and stabilisation interventions are decided upon, in accordance with the rationale presented in in Table 1-3 above. Some of these require to be implemented prior to the excavation reaching its full extent in the vertical and the lateral directions

5) Once such interventions are completed to the satisfaction of the engineer in charge, the next phase of excavation, in the vertical or in the lateral directions, can be authorised to proceed.

6) The process is repeated until the excavation in that particular zone is completed.

3 Equipment to be used

The site presents a wide array of natural soil and rock materials, implying that the right tools will need to be adopted for each material encountered. The following categories of excavation plant are envisaged in the following situations:

Equipment	**Target materials**	**Use**
Terrain leveller	All weak and fractured rocks	General excavation, levelling
Pneumatic jack hammers	All weak and fractured rocks	General excavation
Bucket-type excavators	Weak rock and soil	General excavation
Rotary headers	All weak and fractured rocks	Trimming
Track-mounted Chainsaw	NOT to be used	NOT to be used

4 Disclaimer

Any opinions expressed in this report are based on the ground conditions revealed by the site works, together with an assessment of the site and of laboratory test results. Whilst opinions may be expressed relating to sub-soil conditions in parts of the site not investigated, for example between exploratory positions, these are only for guidance and no liability can be accepted for their accuracy.

This analysis is relevant only to the results obtained through the respective investigation and cannot be extrapolated to other areas.. Ground conditions are relevant only to the positions of the boreholes, and there is no guarantee that similar conditions are replicated in adjacent areas that have not been investigated.

The recommendations in this report are for guidance only and the user remains responsible to make all the necessary geotechnical design checks according to MSA EN 1997-1 Eurocode 7 – Geotechnical Design. General Rules, for every particular foundation situation, and to make the necessary site observations to verify the assumptions described in this report.

Adrian Mifsud B.E.&A.(Hons.), M.Sc.(Lond.), Ph.D. (Melit.), D.I.C., A.&C.E.

Geotechnical Engineer

7th May 2024

5 Appendix A: Structural Geology

The Mellieħa Bay area (Figure 5-1) is controlled by a number of sub parallel ENE – WSW trending faults that develop the distinctive horsts (up-thrown blocks) and grabens (downthrown blocks) of the northwest Malta and the Gozo Channel. These faults delineate the Mellieħa Bay area into distinct horsts and grabens. Mellieħa Bay is defined by the low-lying segment delineated by the two faults running parallel to the Marfa and Mellieħa Ridges. The Hotel is located along the northern member of this fault duplex.

Desk studies, site observations, and borehole investigative drilling operations have demonstrated that the area beneath the MBH is structurally complex and influenced by a series of normal and reverse faults (Figure 5-1). Considerable downthrows are evident such that various strata with distinct material properties juxtapose each other laterally. This complexity is envisaged to exist below a number of the proposed buildings, such that different areas of the same structure may be supported by the different materials on either side of a fault.

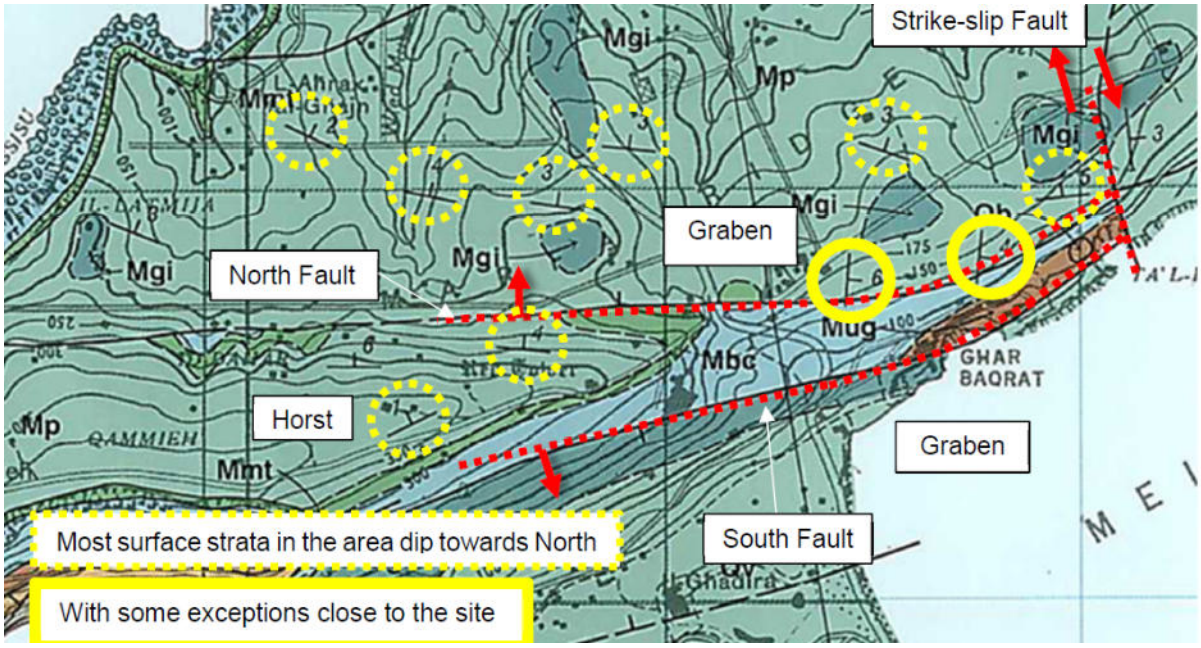

Figure 5-1: View of the geological map focused on the site's area and its immediate surroundings.

The interpretation of the geological cross sections has resulted in the fault lines shown in Figure 5-2. The various shaded areas represent the possible variation inherent to the location of each fault line.

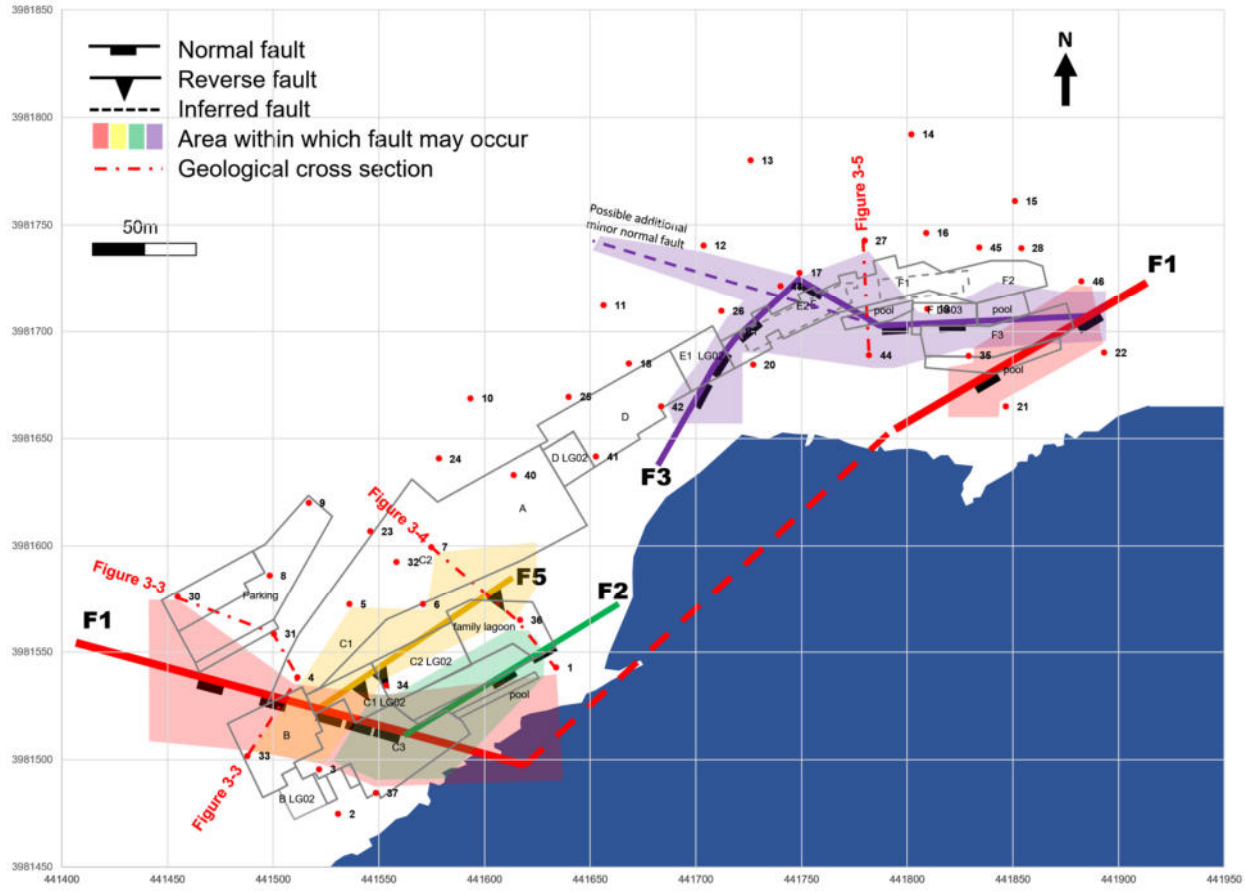

Figure 5-2 - Interpreted structural geology for the MBH area. The position of faults is tentative and the fault may occur anywhere between the two boreholes where a fault is interpreted (shaded areas).

A principal normal fault (**Fault 1**) occurs in the southern limit of the horst upon which the hotel complex is located. The distribution of boreholes across the site allows the position of the fault to be approximated (Figure 5-2: fault F1 denoted by a red line). Borehole investigations clearly indicate that this major fault occurs between BH30-33, BH4-33, BH3-4, BH3-34, BH34-37, BH21-35 and BH22-46. This principal normal fault has a significant throw since the Upper Coralline Limestone formation (UCL) and Middle member of the Globigerina Limestone formation (MGL) are frequently juxtaposed across the fault (Figure 5-2).

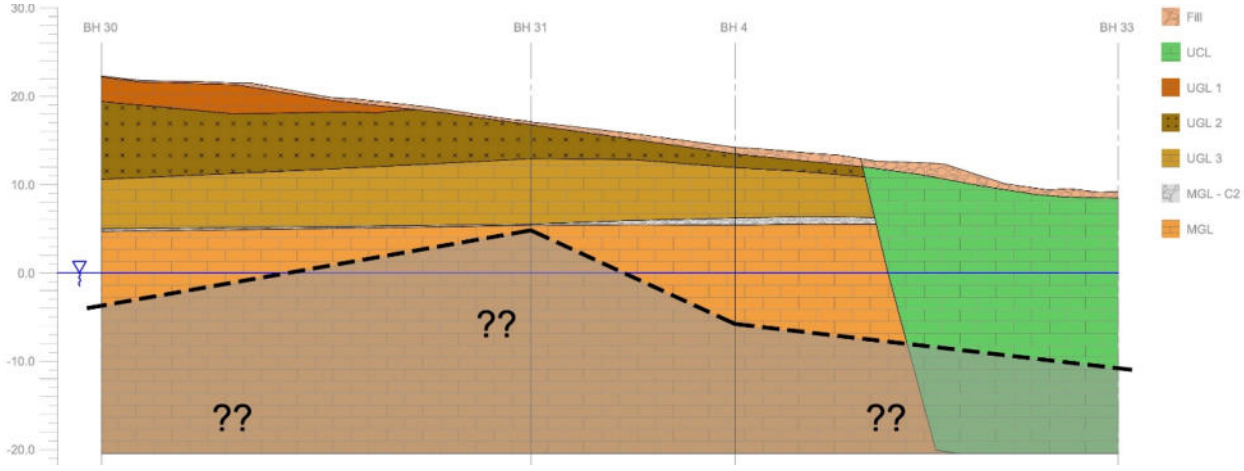

Figure 5-3 - Geological cross section showing fault F1 (geological cross section BH30-31-4-33)

The fault throw can be approximated between 20 to 25m in the NE of the site. This is since the interface between UCL and Blue Clay formation (BC) occurs at 28.38m in the footwall (BH12) and at 4.42m in the

hanging wall (BH22). The fault to the south of the hotel passes beneath the footprint of the existing hotel, specifically beneath its western area and hence beneath the footprint of the proposed hotel. The zone to the south of this fault is the down-thrown side, now forming the existing shoreline.

This principal normal fault (**Fault 1**) has also developed a series of synthetic and antithetic faults which also cause some vertical displacement to the strata observed in the borehole sections. While the throw across the faults is noticeable, it is of a lesser extent than that caused by the principal fault.

In the SW area of the site, a reverse fault (**Fault 5**) is observed between BH4-34 and BH7-36 (Figure 5-2) and a normal fault (**Fault 2**) is observed between BH1-34 and BH1-36 (Figure 5-3). The NE area of the site develops a number of normal faults, though these are less evident from the interpreted BH sections.

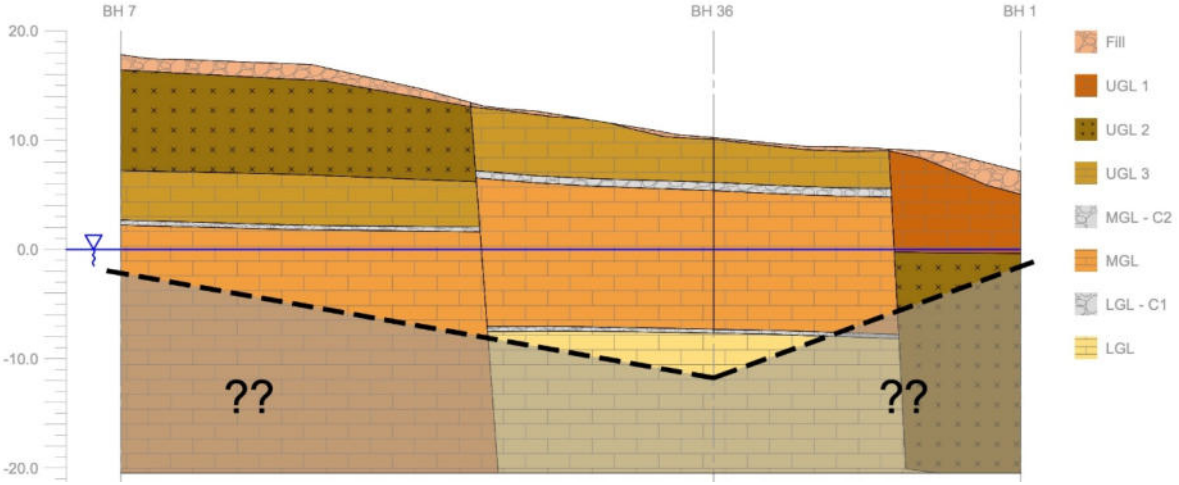

Figure 5-4 - Section showing reverse fault 5; Section showing normal fault 2 (geological cross section BH7-36-1).

A fault **(Fault 3)** is observed between BH22-46, BH19-35 and BH27-44 (Figure 5-5). This fault is interpreted to continue SW between BH20-26, BH18-20 and BH20-43; however, it is possible that this fault continues NW (between BH17-26 and BH11-12) and the fault observed between BH20-26, BH18-20 and BH20-43 may be a distinct normal fault.

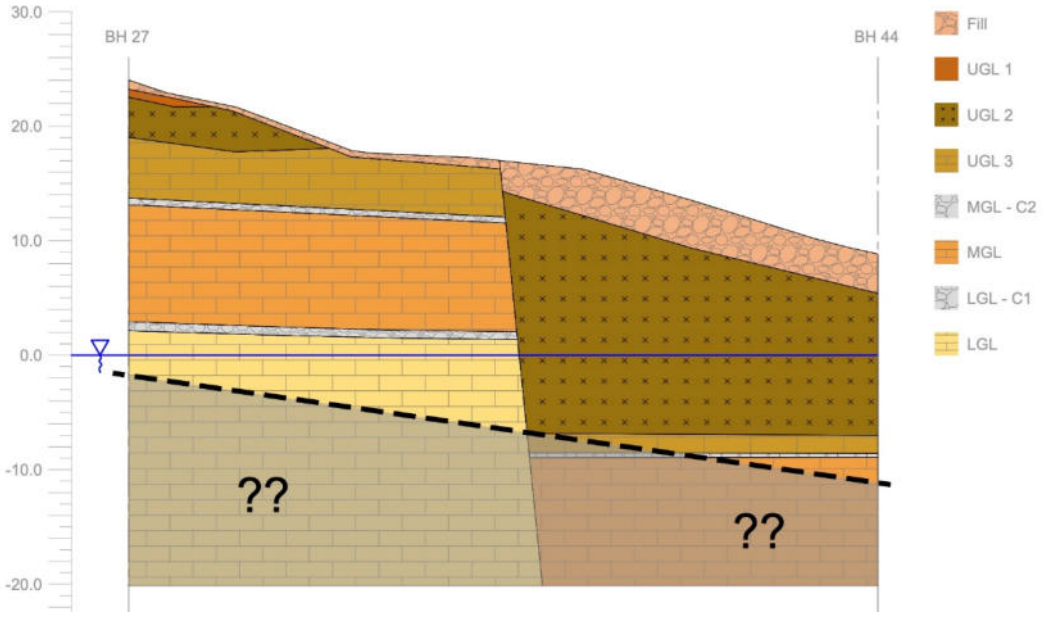

Figure 5-5 - Section showing reverse fault 3; Section showing normal fault 2 (geological cross section BH27-44).

This principal normal fault (**Fault 1**) has also developed a series of synthetic and antithetic faults which also cause some vertical displacement to the observed strata observed in borehole sections. While the throw across the faults is noticeable, it is of a lesser extent than that cause by the principal fault.

15 APPENDIX B – EXCAVATION EMMS

PA/01948/20

PROPOSED EXCAVATION WORKS AND CONSTRUCTION OF HOTEL COMPRISING OF 359 GUEST BEDROOMS AND ANCILLARY FACILITIES. PROPOSAL INCLUDES LANDSCAPING, POOLS, RESTORATION/CONSTRUCTION OF RUBBLE WALLS AND RESTORATION OF PART OF THE COAST AND 2 LPG STORAGE TANKS

AT

MELLIEHA BAY HOTEL, TRIQ IL-MARFA, GHADIRA, MELLIEHA

ENVIRONMENTAL MANAGEMENT METHOD STATEMENT

(EXCAVATION PHASE)

MAY 2024

1. INTRODUCTION

1.1. This document refers to the excavation phase of the redevelopment project of the Mellieha Bay Hotel in L-Ghadira, Mellieha. It outlines the procedures that the Contractors and sub-contractors will implement on site in order to address the day-to-day environmental issues that may arise throughout the execution of the project. It sets out those implementation measures that will ensure a proper management of the environmental effects of the excavation works, and the mitigation, reduction, or elimination of the environmental impacts.

1.2. This Environmental Management Method Statement (EMMS) deals with the waste management procedures to be implemented on site during the excavation phase to control the use of fuels and hazardous materials on site, the generation of dust, noise, and vibration, the control of waste and run-off water, the protection of the marine environment, and the general reduction in nuisance effects on surrounding land, properties, and users.

1.3. In the following sections, an overview of the Project is provided, together with details of the main Contractor's personnel and their duties and responsibilities under the Construction Management Plan[1] (CMP) and this EMMS. The environmental commitments of the works related to the excavation of the site of the former Mellieha Bay Hotel in L-Ghadira, Mellieha, as emanating from environmental legislation, are also identified and environmental control measures that address these commitments are proposed. Detailed Environmental Control Measures Sheets for each environmental impact are also included. In addition, the Environmental Monitoring Plan (EMP) that had been prepared for the demolition phase and updated to cater also for the demolition of the ground slabs will also apply for the excavation phase and is provided as a third document. This outlines the monitoring to be undertaken throughout the excavation phase of the works subject of development permit PA/01948/20.

1.4. This Method Statement may need to be updated throughout the lifetime of the works.

1.5. ***This Method Statement is complementary to and is to be ready in conjunction with the Construction Management Plan – PA/01948/20 v2 (March 2024) and future updates of the document, prepared by the applicant for the project. The CMP includes information on the environmental protection measures to be employed during the project implementation, which measures are further elaborated upon in this EMMS***.

[1] A separate Construction Management Plan for the Excavation Phase has been prepared by the Project Manager and an Excavation Works Method Statement has been prepared by the Geotechnical Engineer of the Developer and are being submitted as separate but complementary documents.

2. GENERAL PROJECT DETAILS

Project name:

2.1. The project is the excavation phase of the site of the former Mellieha Bay Hotel in Triq il-Marfa, l-Ghadira, Mellieha in preparation for the construction of the replacement hotel.

Developer:

Mellieha Bay Hotel Limited

Project Description:

2.2. The Mellieha Bay Hotel consisted of eight blocks and an external bar area (known as the "Jamaica Inn"). It was constructed along the northern shore of Mellieha Bay as shown in **Appendix 1** and consisted of the hotel building, as well as ancillary facilities in the form of sports courts, car parks, an access road, pools and pool decks, concrete platforms, stairs, and coastal infrastructure. The site is some 450 m in length.

2.3. All the buildings of the former hotel have since been demolished down to ground level and the ground slabs are currently being removed under development permit PA/09876/19. The planned excavation works are the subject of a separate development permit (PA/01948/20).

2.4. As described in the Works Method Statement[2], the excavation works will be divided into distinct phases and for each phase, the following procedure will be adopted:

- The main starting point of the excavation will be identified and the routes of the excavation plant and tipper trucks established;
- The excavation will proceed in the centre of each identified area, such that the natural rock and soil formations are well exposed prior to reaching the boundary of each designated excavation zone;
- The freshly exposed excavation faces are inspected by the engineer in charge, to determine the need or otherwise of stabilization interventions;
- Decide on the need, extent and location of investigative and stabilisation interventions that may be required;
- Proceed with the next phase of excavation (vertical or horizontal);
- Repeat process until all excavation in each zone is completed.

[2] Mifsud, A., 2024. Redevelopment of Mellieha Bay Hotel – Excavation Method Statement (Job No.: Rep. no. 5)

2.5. The works may also include minor construction works related to the excavation, such as the construction of retaining structures, slope stability measures and the construction of temporary substation and electrical room.

Site map:

See **Appendix 1**.

Duration of Project:

2.6. The excavation work is estimated to be completed within 16 weeks split into two phases either side of the summer ban on excavation in tourism zones. The first part of the excavation is expected to commence in the first week of May to mid-June. The second part will commence after the summer ban in October and run to mid-December 2024.

2.7. The excavation area is as shown in **Appendix 2**.

3. REFERENCE DOCUMENTS

- Development Permit PA/09876/19 - Proposal of Demolition of Existing Hotel at Mellieha Bay Hotel, Triq Il-Marfa, Ghadira, Mellieha
- Development Permit PA/01948/20 - Proposed excavation works and construction of hotel (Class 3B) comprising of 359 guest bedrooms and ancillary facilities: 5 restaurants; snackeria; ice-cream outlet; 2 internal bars and 2 pool bars; an entertainment hall; an indoor and outdoor kids' play area; indoor teens' play area; 2 retail outlets; spa area inclusive with indoor pool, treatment rooms and a salon. Proposal also includes soft/hard landscaping, pools, restoration/construction of rubble walls and restoration of part of the coast and 2 LPG storage tanks of a volume of 5000L each at Mellieha Bay Hotel, Triq Il-Marfa, Ghadira, Mellieha
- Mellieha Bay Hotel Ltd, 2023. Mellieha Bay Hotel - Construction Management Plan (Demolition Phase). Permit Reference No.: PA/09876/19
- Innovative Architectural Structures, 2024. Mellieha Bay Hotel - Construction Management Plan – PA/01948/20.
- Mifsud, A., 2024. Redevelopment of Mellieha Bay Hotel – Excavation Method Statement (Job No.: Rep. no. 5)
- Polidano Bros. Ltd, 2024. Works Method Statement for the excavation phase of the MBH, 12 pp.

4. MAIN PERSONNEL

Developer's Team:

Mellieha Bay Hotel Ltd			
Designation	**Name**	**Contact No.**	**Contact Email**
Applicant	Mr Brian Mizzi (Mellieha Bay Hotel Ltd)		brian.mizzi@mizzi.com.mt
Client Representative	Mr Victor Pollacco (Mellieha Bay Hotel Ltd)	79282592	vpollacco@melliehabayhotel.com
Project Manager	Perit Peter Zammit (iAS Limited)	99427363	peter.zammit@ias.com.mt
Project Architect	Perit Dr Edwin Mintoff (EMA)	99498029	em@edwinmintoff.com
Perit responsible for excavation	Perit Ing. Dr Adrian Mifsud (Geotech1)	79321826	adrian.mifsud@geotech1.net
Site Manager	Mr. Paolo Rossitto (iAS Limited)	99463492	paolo.rossitto@ias.com.mt
Project Engineers	Ing. Joseph Scicluna (Scicluna & Associates)	99422726	joseph@scicandassoc.com
Fire Engineer	Ing. Gaston Degiovanni (AP Services)	79494861	gaston@apservices.com.mt
H&S Project Supervisor	Ing. Claude Farrugia (Resolve Ltd)	79826530	cfarrugia@rcl.com.mt
EIA Coordinator	Mr Adrian Mallia (Adi Associates Environmental Consultants Ltd)	99492381	adrian@adi.com.mt
Archaeological Monitor	Mr Jeremy Besancon (JB Arch Team)	79289569	jeremy@jbarch.com
Environmental Monitor	Mr Steven Treeby (En-Sure Limited)	79321384	steven@ensure.com.mt

Excavation Works Contractor's Team:

Polidano Brothers Limited			
Designation	**Name**	**Contact No.**	**Contact Email**
Excavation Contractor	Mr Charles Polidano (Polidano Bros Ltd)	994928266	charles.polidano@polidano-group.co
Project Manager	Perit Luca Carretti	99002357	luca.carretti@polidano-group.com
H&S Officer	Mr Aldo Busuttil	99441669	aldo.busuttil@aldb.com.mt

5. ENVIRONMENTAL DUTIES AND RESPONSIBILITIES

5.1. The following outlines the duties and responsibilities of the team members of the Contractors and Sub-contractors (whether identified or not) in connection with the CMP and this EMMS. The assignment and communication of duties and responsibilities to individual named members of the team will help ensure the successful implementation of the Project. It is to be noted that the individual team members may have other duties and responsibilities in connection with their main assignment, which may not have a bearing on the implementation of the CMP and this EMMS. These latter duties and responsibilities are not included in **Table 1** below.

Table 1: Environmental Duties and Responsibilities of Main Contractor Personnel

Title:	Excavation Contractor
Name:	Mr Charles Polidano / representative
General Duties & Responsibilities:	Liaising with the Project Manager (MBH) and the Environmental Monitor (MBH) to ensure that the environmental duties and responsibilities as stated in this document are followed. Ensuring that all relevant information on project programming, timing, excavation methodology, etc., is communicated from the Contractor's Project Team in a timely and efficient manner in order to allow pre-emptive actions relating to the environment to be taken where required. Liaising with the Environmental Monitor (MBH) in preparing site-specific Method Statements for all work activities where there is a risk of environmental damage, by incorporating relevant environmental control measures and referring to relevant Environmental Control Measure Sheets. Liaising with the Environmental Monitor (MBH) in reviewing and updating site-specific Method Statements for all work activities where environmental control measures and Environmental Control Measure Sheets have been altered. Liaising with the Environmental Monitor (MBH) and H&S Project Supervisor (MBH) in the preparation of site-specific Method Statements dealing with environmental, health and safety issues. Liaising with the Environmental Monitor (MBH) to ensure that all environmental mitigation measures are implemented throughout execution of works and to implement any recommendations from the Environmental Monitor (MBH). Liaising with the Environmental Monitor (MBH) where third party agreement is required in relation to site-specific Method Statements, environmental control measures and / or Environmental Control Measure Sheets. Liaising with the Project Team in assigning duties and responsibilities in relation to the CMP and EMMS to individual members of the project staff.

	Sequencing and progressing of work in line with contract requirements and ensuring respect of CMP/EMMS provisions.
Title:	Construction Site Manager
Name:	Mr Paolo Rossitto
General Duties & Responsibilities:	Ensuring operatives under his control adhere to the relevant environmental control measures and relevant site-specific Method Statements, etc. and implement mitigation measures as recommended by the Environmental Monitor (MBH). Ensuring that procedures agreed during third party consultations are followed. Reporting immediately to the Environmental Monitor (MBH) any incidents where there has been: i. a breach of agreed environmental management procedures; ii. a spillage of a potentially environmentally harmful substance; iii. an unauthorised discharge to ground, water, or air, iv. damage to a protected habitat, v. unearthing of an artefact of potential archaeological interest, etc; Attending environmental review meetings as required and following up on any required actions. Coordinating site interventions in the event of spillages or other pollution or environmental incidents that may have a health and safety implication.
Title:	Contractor's H&S Officer
Name:	Mr Aldo Busuttil
General Duties & Responsibilities:	Liaising with the Environmental Monitor (MBH) and the H&S Project Supervisor (MBH) in the preparation of site-specific Method Statements dealing with environmental, health and safety issues.
Title:	EIA Coordinator
Name:	Mr Adrian Mallia
General Duties & Responsibilities:	Liaising with the Project Manager (MBH) / Client representative and with the Excavation Contractor / Project Architect / Construction Site Manager and providing direction and guidance on environmental aspects highlighted in the EIA findings and permit conditions especially with regards to work activities that may have a risk of environmental damage or require restorative interventions. Reviewing environment-related proposals / plans / reports produced by the Contractor's Team Liaising with PA, ERA, EHD, and any other relevant authorities on environmental matters related to the Project on behalf of the Developer.
Title:	Environmental Monitor (MBH)
Name:	Mr Steven Treeby
General Duties & Responsibilities:	Liaising with the Excavation Contractor / Project Architect / Construction Site Manager (as relevant) and providing information on environmental management during the course of the excavation works.

	Ensuring that all relevant works have (and are being carried out in accordance with) the required permits, licences, certificates, planning permissions, etc. Bringing to the attention of the Project Architect / Construction Site Manager any timing and legal constraints that may be imposed on the carrying out of certain tasks. Ensuring that any operations or activities that require certificates of registration, waste collection permits, waste permits, waste licences, etc., have appropriate authorization. Keeping up to date with changes in environmental legislation that may affect environmental management during the construction phase and implement relevant measures on site. Advising the Project Manager (MBH) of these changes. Reviewing and amending the EMMS in light of these changes and bringing the changes to the attention of the Project Manager (MBH) / Project Architect / Construction Site Manager. Carrying out regular inspections of the site and documenting findings to ensure that work is being carried out in accordance with the environmental control measures and/or relevant site-specific Method Statements, etc. Identifying requirements for specialist environmental contractors. Co-ordinating the activities of all specialist environmental contractors on environmental matters arising out of the contract. Ensuring that on-site personnel notify all incidents where there has been: i. a breach of agreed environmental management procedures: ii. a spillage of a potentially environmentally harmful substance; iii. an unauthorised discharge to ground, water or air; iv. damage to a protected habitat; v. the unearthing of an artefact of potential archaeological interest, etc.; Ensure that the Environmental Emergency Response Plan is available, and staff are trained to respond in the case of emergencies. The Environmental Monitor (MBH) is responsible for notifying the Project Manager (MBH) and / or relevant statutory authorities (if necessary) of environmental incidents. Carrying out an investigation and producing a report regarding environmental incidents and ensuring any damage is rectified by the Contractor. Providing toolbox talks on Environmental Control Measures associated with site-specific Method Statements to those who will undertake the work.

Title:	All Site Personnel
General Duties & Responsibilities:	Personnel should adhere to the relevant Environmental Control Measures and relevant site-specific Method Statements set out in this Plan. Reporting immediately to the Construction Site Manager / Environmental Monitor (MBH) any incidents where there has been a breach of agreed procedures including: a spillage of a potentially environmentally harmful substance; an unauthorized discharge to ground, water or air, damage to a protected habitat, etc.

6. ENVIRONMENTAL COMMITMENTS

6.1. Environmental Commitments emanate from a number of sources related to the Project, namely:

- The contract documents;
- The conditions imposed by PA in the development permit;
- The conditions imposed by the ERA in the environmental permit / development permit; and / or
- Relevant environmental legislation.

6.2. **Table 2** identifies the Environmental Commitments relevant to the excavation phase for the redevelopment of the Mellieha Bay Hotel in L-Ghadira, Mellieha and each is cross-referenced to the specific conditions or legislation, etc. **Table 2** also identifies the methods by which each Environmental Commitment is proposed to be met. It is important to note that the Environmental Commitments, as well as the methods by which they are met, may alter over the course of the works and hence this summary table may be updated from time to time.

Table 2: Environmental commitments table

Environmental Commitment	Reference to Source of Environmental Commitment (e.g., permit condition, etc)	Reference to Method by which the Environmental Commitment will be met (e.g., site specific Method Statement or Environmental Control Measure)	Reference to Documentary Proof that Environmental Commitment has been met (e.g., signed off site specific Method Statement)
Nominate an Environmental Monitor to oversee the implementation of the EMMS, coordinate the specialist consultants (if any), and ensure that the work is carried out in accordance with all permit conditions and other documents, including the CMP.	CMP; EMMS	Construction Management Plan; Environmental Management Method Statement	Approved CMP, signed off EMMS, and Developer's / Contractor's Organigram
Unused waste material to be disposed of at an official waste disposal site.	CMP; WMP; EMMS	CMP; WMP; EMMS; Environment Control Measures Sheet 4	Approved CMP, WMP, EMMS, and Environmental Control Measure Sheet 4; Environmental monitoring reports; Waste receipts
Investigate opportunities to minimise waste generation at source. Where such waste generation is unavoidable every opportunity to be taken to maximise the recycling and / or reuse of any excavation materials when appropriate.	CMP; WMP; EMMS	CMP; WMP; EMMS; Environmental Control Measures Sheet 4	Approved CMP, WMP, EMMS, and Environmental Control Measures Sheet 4; Environmental Monitoring Reports

Environmental Commitment	Reference to Source of Environmental Commitment (e.g., permit condition, etc)	Reference to Method by which the Environmental Commitment will be met (e.g., site specific Method Statement or Environmental Control Measure)	Reference to Documentary Proof that Environmental Commitment has been met (e.g., signed off site specific Method Statement)
Segregation of waste by type and for recycling to be carried out on site for which dedicated and labelled skips or waste segregation areas are to be provided in adequate quantities and locations to suit the demands of the project. No burning of waste to be carried out on site. The contents of the skips or waste segregation areas to be regularly compacted and emptied to be taken to the designated dumping site (if the material is not recyclable), using dust covers during transit. Waste streams to be sorted into as efficient a system as is practically possible. An adequate Central Waste Management Facility (CWMF) and coalface waste receptacles to be provided across the site, as applicable. Waste receptacles to be appropriately marked to facilitate waste separation as per legislation.	CMP; WMP; EMMS	CMP; WMP; EMMS; Environmental Control Measures Sheet 4	Approved CMP, WMP, EMMS, and Environmental Control Measures Sheet 4; Environmental Monitoring Reports
Facilities such as temporary offices, waste and maintenance facilities, and storage areas / logistic hubs, will be located on site and away from the coast.	CMP; EMMS	CMP; EMMS; Environmental Control Measures Sheet 7	Approved CMP, WMP, EMMS, and Environmental Control Measures Sheet 7; Environmental Monitoring Reports
All stockpiles of excavation waste material will be positioned in such a way as to avoid contamination of the sea through wind, runoff, or accidental spillages respectively.	CMP; EMMS	CMP; EMMS; Environmental Control Measures Sheet 6	Approved CMP, WMP, EMMS, and Environmental Control Measures Sheet 6; Environmental Monitoring Reports

Environmental Commitment	Reference to Source of Environmental Commitment (e.g., permit condition, etc)	Reference to Method by which the Environmental Commitment will be met (e.g., site specific Method Statement or Environmental Control Measure)	Reference to Documentary Proof that Environmental Commitment has been met (e.g., signed off site specific Method Statement)
Dust suppression equipment shall be installed and used during the excavation works and in stockpiling areas to ensure that dust or mud does not contaminate areas adjacent to the site.	CMP; EMMS	CMP; EMMS; Environmental Control Measures Sheet 6	Approved CMP, WMP, EMMS, and Environmental Control Measures Sheet 6; Environmental Monitoring Reports
Dedicated haul routes for excavation waste traffic and deviation routes for the public (if applicable) will be provided throughout the excavation phase with a view to minimizing impact on traffic flow. Haul routes shall likewise be compacted and watered down to minimise dust entrainment by vehicles and wind.	CMP; EMMS	CMP; EMMS; Environmental Control Measures Sheet 3	Approved CMP, EMMS, and Environmental Control Measures Sheet 3; Environmental Monitoring Reports
All plant, machinery and other equipment which is audible at the application site boundaries, and in particular at the adjacent beach and the Ghadira nature reserve, shall only be operated with appropriate measures to reduce noise disturbance in so far as is reasonably practicable.	CMP; EMMS	CMP; EMMS; Environmental Control Measures Sheet 5	Approved CMP, EMMS, and Environmental Control Measures Sheet 5; Environmental Monitoring Reports
Plant / vehicles to be refuelled by bowser.	EMMS	EMMS; Environmental Control Measures Sheets 1, 2 and 7	Approved CMP, EMMS, and Environmental Control Measures Sheets 1, 2 and 7; refuelling logs; Environmental Monitoring Reports

Environmental Commitment	Reference to Source of Environmental Commitment (e.g., permit condition, etc)	Reference to Method by which the Environmental Commitment will be met (e.g., site specific Method Statement or Environmental Control Measure)	Reference to Documentary Proof that Environmental Commitment has been met (e.g., signed off site specific Method Statement)
Drip trays to be utilised at all times by the Contractor and sub-contractors for the purposes of containing and collecting any spillages during re-fuelling. The trays will be inspected and spilled oil shall be disposed of appropriately or re-used.	EMMS	GEP; EMMS; Environmental Control Measures Sheets 1, 2 and 7	Approved CMP, EMMS, and Environmental Control Measures Sheets 1, 2 and 7; Environmental Monitoring Reports
All chemicals (if any) shall be stored in contained impermeable areas with bunds.	CMP; EMMS	EMMS; Environmental Control Measures Sheets 1 and 2	Approved CMP, EMMS, and Environmental Control Measures Sheets 1 and 2; Environmental Monitoring Reports
Runoff from any stockpiling / waste areas shall be collected and / or intercepted so as to avoid contamination to land, the coastal zone, and the marine environment.	CMP; EMMS	EMMS; Environmental Control Measures Sheet 7	Approved CMP, EMMS, and Environmental Control Measures Sheet 7; Environmental Monitoring Reports
Any use of artificial temporary light during the excavation works will be full cut-off and minimized to reduce the impact on the surrounding environment. Artificial lighting to be used sparingly.	EMMS	EMMS	EMMS; Environmental Monitoring Reports
Measures ensuring effective protection of fauna and flora in the works area and its surroundings will be in place throughout the excavation works and particular at the periphery of the site.	EMMS	EMMS; Environmental Control Measures Sheet 8	EMMS; Environmental Control Measures Sheet 8; Environmental Monitoring Reports

7. ENVIRONMENTAL CONTROL MEASURES

7.1. Environmental Control Measures are discrete actions or procedures that will assist in meeting the Environmental Commitments of the Project.

7.2. For ease of reference, the Environmental Control Measures have been grouped by environmental impact type. The following Sections set out individual Environmental Control Measure Sheets for each measure.

7.3. The Environmental Monitor (MBH) will be responsible to bring the Environmental Control Measure Sheets to the attention of the Project Manager (MBH), the Project Architect, and the Construction Site Manager (as relevant). The latter, with the assistance of the Environmental Monitor (MBH) will be responsible to bring the relevant Environmental Control Measure Sheets to the attention of all site personnel.

7.4. Environmental Control Measure Sheets for the following issues have been prepared:

- Management of Fuel Storage and Transport;
- Management of Hazardous Substances;
- Traffic Management;
- Waste Management;
- Noise and Vibration Management (including monitoring and control);
- Dust and Air Quality Management;
- Surface and Groundwater Protection Plan;
- Environmental protection (including Marine Environment);
- Pollution Incidents Control Plan; and
- Management of Environmental Incidents.

7.5. For the avoidance of doubt, the reference to a specific designation as regards specific responsibilities in the Control Measure Sheets outlined in the next sections refer equally to the personnel designated or his/her representative or other personnel delegated that function on a permanent or temporary basis.

8. ENVIRONMENTAL CONTROL MEASURE SHEET 1:

Fuel Storage and Transport

Environmental Control Measure 1A – Refuelling of plant and equipment

8.1. If storage of fuel on site is unavoidable, fuel will be stored on site in designated areas provided with an impermeable base and adequate bunds capable of containing a volume 10% greater than the total storage capacity.

8.2. All mobile supporting vehicles (e.g., vans, trucks, and HGV) must be refuelled off-site.

8.3. Refuelling will only take place with the prior notification of a designated person.

8.4. Refuelling will be supervised to reduce the risk of spillages and ground contamination. Refuelling will be undertaken in a location remote from any watercourse or drain and as far away from the sea as possible. Where necessary, funnels will be made available for refuelling purposes.

8.5. A purpose-designed portable drip tray will be provided beneath the refuelling point to collect any spillages during disconnection of the flexible tanker hose. This drip tray will be emptied and cleaned at the end of the refuelling activity.

8.6. It is expected that plant will be refuelled on a need basis; a log of refuelling sessions will be kept by the Construction Site Manager (updated after each session) and copied to the Project Manager (MBH) and the Environmental Monitor (MBH) at the end of the week.

Environmental Control Measure 1B – Fuel Bowsers

8.7. Refuelling of all plant present will take place by means of road tankers (bowsers). Fuel bowsers will be bunded or double skinned. Refuelling from bowsers will take place *in situ* by means of appropriate fuel booms equipped with an automatic pistol grip fuel nozzle.

8.8. An appropriate spill response kit will be available on the bowser and the operator of the bowser will be trained in its deployment and use. Additional spill response kits will be available on site near the exits / site offices and their location will be signposted or otherwise made known to site operatives. A notice will be located immediately adjacent to the refuelling location detailing filling procedures and emergency response measures.

Environmental Control Measure 1C – Generators or Other Equipment

8.9. Drip trays will be put in position when using generators or other equipment where leakage or spillage could occur.

8.10. The trays will be checked regularly and emptied before and after rains. Large amounts will be collected in a designated container for re-use. Small amounts will be wiped, and the oily rags disposed of as hazardous waste.

Responsibilities

8.11. The Construction Site Manager will ensure that bunds and trays are checked regularly and at least on a weekly basis.

8.12. The Construction Site Manager will ensure that road tanker operators have been trained in the use of the tanker and in the safe use of spill response materials. He / she will also ensure that spill response kits are available on site and on the road tankers.

8.13. The Construction Site Manager will keep a log of the refuelling sessions (updated after each session) and send an updated copy to the Project Manager (MBH) and the Environmental Monitor (MBH) at the end of each week.

9. ENVIRONMENTAL CONTROL MEASURES SHEET 2:

Hazardous Substances

Environmental Control Measure 2A – Use of Hazardous Substances

9.1. If hazardous substances are present on site, this will be clearly shown on the informative labels at the Site main access points.

9.2. Substances marked with any of the labels below will be stored at least 50 metres from drains, culverts, channels, or the sea.

9.3. Any oils, chemicals, or lubricating fluids kept on site will be stored on spill trays and if necessary, on an impervious base surrounded by an impervious bund capable of containing a volume 10% greater than the total storage capacity.

9.4. There will not be any maintenance on site and the Construction Site Manager will frequently (at least once daily) patrol the site to identify leaking plant and send them off-site / deploy drip trays according to the nature of the leak.

9.5. Suitably stocked spill kits will be kept on standby when works are being carried out in the vicinity of channels, drains, culverts, wells, or the coast. Site operatives will be trained in the use of the spill kits.

9.6. All hazardous substances will be stored in a safe manner in such a way that they will not be at risk of spillage or damage, e.g., away from traffic routes.

9.7. Empty canisters or containers that contained hazardous substances will be collected and disposed of in a hazardous waste skip / bin.

9.8. Copies of Material Safety Data Sheets for all hazardous substances used on site will be kept in an appropriate file at the site office.

9.9. Sub-contractors should provide a copy of the Material Safety Data Sheets to the Project Manager (MBH) and the Environmental Monitor (MBH) for all hazardous substances brought on site.

Responsibilities

9.10. The Construction Site Manager will be responsible for ensuring hazardous substances are properly stored.

9.11. Sub-contractors (if any) will provide a copy of Material Safety Data Sheets to the Construction Site Manager, the Contractor's H&S Officer and the Environmental Monitor (MBH).

9.12. The Construction Site Manager, the Contractor's H&S Officer, and the Environmental Monitor (MBH) will keep copies of Material Safety Data Sheets for all hazardous substances.

10. ENVIRONMENTAL CONTROL MEASURES SHEET 3:

Construction related Traffic

10.1. The Contractor shall carry out the works in such a way that inconvenience to the public arising from the increases in traffic flows and disruptive effects of construction traffic on local and main roads is limited, as far as is reasonably practicable.

10.2. Proper signage will also be erected on and in the vicinity of the site and alternative access routes will also be provided for any blocked routes commonly used by third parties. There will be regular consultation with the Local Council, local businesses and other local stakeholders to keep them informed of the progress of the project and possible disruptions.

10.3. Where deemed reasonably practicable (and depending on technical working conditions and safe work methods), plant and site equipment will be located away from noise sensitive receptors.

Environmental Control Measure 3A – Site Access

10.4. Site access and traffic plans shall be as set out in the CMP.

10.5. The impact of construction traffic on the surroundings and the road network will be minimized by careful on- and off-site management with designated public road routes and reducing the need to import / export materials / spoil.

10.6. Excavation works will be co-coordinated by the Perit responsible for excavation, who will have overall responsibility and oversight of the excavation works and will be in charge of monitoring the geological stability of the excavation works and the relevant slopes. He will liaise with the Project Manager (MBH) / Construction Site Manager / Environmental Monitor (MBH) and will provide regular updates and reports as necessary. Other site logistics will be the responsibility of the Construction Site Manager.

10.7. Where vehicles or other items of equipment have to use the road network the Perit responsible for excavation/ Construction Site Manager shall take precautions to prevent damage to the carriageway and footways. Timber mats, steel plates, rubber tyres, or trailers shall be used as necessary and in particular under tracked vehicles.

Environmental Control Measure 3B – Parking

10.8. The parking of construction vehicles on footways, double parking, the queuing of vehicles and local circulation by construction vehicles shall be prohibited on roads in the vicinity of the Site and the adjacent car park.

10.9. No parking will be available on site for construction personnel. Workers will avail themselves of the nearby public car parking spaces to park their personal vehicles.

Environmental Control Measure 3C – Dust Mitigation

10.10. All construction-related vehicles (and vehicles of construction management staff) will abide by speed limits for the site. If speed limits already exist, these will be observed. If none exist, the Construction Site Manager will establish low speed limits throughout the site (max. 10 km/h) to reduce dust emissions from haulage roads. Speed limit signs will be placed at strategic places and staff informed accordingly. Sub-contractors will also be informed of such arrangements.

10.11. An easily cleaned hard-standing area will be designated adjacent to the egress points within the Site for vehicles entering, parking, and leaving the Site. The area will include wheel washing facilities with mechanical wheel spinners, sludge traps and drainage.

10.12. Mechanical road sweepers and / or wheeled shovels will be readily available to clean site hard-standing areas and to clean any mud or debris deposited by work vehicles on roads or footways in the vicinity of the Site. These will be supported with manual sweeping, if necessary.

10.13. Heavy Goods Vehicles carrying spoil / waste shall be fully sheeted on the public highway. Spoil / waste shall be carefully loaded into the lorry and the lorry shall be inspected before leaving the Site, to ensure that no clinging fragments of spoil or waste are present which could fall off onto the public roadway while in transit.

Environmental Control Measure 3D – Safety

10.14. Vehicles shall be prohibited from unattended reversing into the Site. As far as possible, vehicles and equipment shall enter and exit the Site in a forward direction. The Construction Site Manager shall ensure that all construction vehicles are equipped with audible reversing alarms.

Environmental Control Measure 3E – Accidents

10.15. All accidents, near misses, or unsafe situations shall be promptly reported to the Construction Site Manager and the Contractor's H&S Officer and recorded.

Responsibilities

10.16. The Construction Site Manager will be responsible to ensure that adequate signage is present on site.

10.17. The Contractor's H& S Officer will be responsible to report accidents and near misses and bring unsafe situations to the attention of the Construction Site Manager and the H&S Project Supervisor (MBH).

10.18. The Construction Site Manager will be responsible to bring any observed impacts to the attention of the Environmental Monitor (MBH).

11. ENVIRONMENTAL CONTROL MEASURE SHEET 4:

Waste Management

11.1. The excavation works will result in significant amounts of inert waste that will require management. This Plan identifies the likely waste streams that may be so generated, their method of management, and the Contractor's targets for waste reduction and recycling (if any).

11.2. The likely materials streams envisaged for the excavation phase of the Project are:

- Topsoil and other agricultural soil;
- Inert bulk excavation waste.

11.3. If hazardous wastes are generated during the works (e.g. oily rags or fuel spillages), these will be handled separately in accordance with hazardous waste consignment permits to be issued by ERA.

11.4. By the time that the excavation works will commence on site, all demolition waste materials generated during the previous phase would have been carted away from the site. Any waste materials leaving the site will be carted away by licensed waste contractors (copies of licences of the Contractor and waste carrier details of all vehicles will be provided); all waste carrying vehicles used on site (whether by the Contractor or sub-contractors) will be appropriately registered with ERA, as required by legislation.

Environmental Control Measure 4A – Compliance with relevant Licences, Approvals and Legislation

11.5. All works should comply with the relevant licences, approvals, and legislation. Relevant legislation includes:

- European Union Directives:
    - Directive 2008/98/EC – Waste Framework Directive;
    - Directive 2004/35/EC – Environmental liability with regards to prevention and remedying of environmental damage;
    - Directive 2000/532/EC – Replacing Decision 94/3/EC establishing a list of wastes pursuant to Article 1(a) of Council Directive 75/442/EEC on waste and Council Decision 94/904/EC establishing a list of hazardous waste pursuant to Article 1(4) of Council Directive 91/689/EEC on hazardous waste;
    - Directive 1991/689/EEC – Hazardous Waste;
    - Directive 1991/156/EEC – amending Directive 1975/442/EEC on Waste;

- National legislation:
    - SL 549.63 – Waste Regulations, as amended by Legal Notices LN 441 of 2011, 384 of 2012, 6 of 2014, 382 of 2015 and 164 of 2017; and
    - S.L. 549.45 – Waste Management (Activity Registration) Regulations.

Environmental Control Measure 4B – Excavation Waste

11.6. Works are envisaged to proceed from the western side of the project site to the east. The excavation material will be separated according to type. Topsoil and agricultural soil will first be cleared down to bedrock. The soil, which cannot be disposed of, in line with the Fertile Soils (Protection) Regulations, will be sifted and temporarily stored on existing adjacent agricultural land owned by the Developer.

11.7. The soil sieving will be undertaken on site in a purposely set up area. The process will remove stones and boulders from the soil matrix. The soil will be stored separately, and any boulders or stones will be stored separately for re-use in dry stone wall building.

11.8. The removal of the soil will also be supervised by the archaeological monitor working under supervision of the Superintendent of Cultural Heritage. Bulk excavation in the bedrock will only commence once the SCH gives its clearance. This can happen in distinct sections as each is cleared.

11.9. Bulk excavation will follow the approved excavation plan (see **Appendix 2**).

11.10. Inert excavation waste from the bulk excavation will be carted away on tipper trucks to the authorised dumping / inert waste recycling site at Quarry HM33, Ta' Belula, Ghar Lapsi Road, l/o Siggiewi.

Environmental Control Measure 4C – Waste Prevention, Reuse and Recycling

11.11. The topsoil and agricultural soil will be reused on site for the future landscaping scheme or added to the soil in the adjacent fields owned by the developer. The bulk excavation material will not be reused on site.

11.12. Material handling will follow appropriate technical specifications / the CMP and this EMMS / other waste management plan so as to minimise / eliminate waste.

Environmental Control Measure 4D – Waste Carting Off-site

11.13. All waste carriers will be licensed to carry the specific waste type. Copies of waste carrier licences will be provided prior to the carrier being allowed to access the site.

11.14. An identification plate or sticker will be fixed on each lorry licensed to carry waste and employed on the Contract. This shall be affixed in a prominent position, located at the front of the lorry and in compliance with current safety

legislation and the Highway Code, uniquely identifying the Contract Number. The identification will be easily read at a distance of 20 metres and will not be removed until carriage and disposal of the waste from the worksite has been completed.

Environmental Control Measure 4E – Treatment of Hazardous Waste

11.15. A specialist hazardous waste contractor will be engaged to handle and cart away any hazardous wastes generated during the excavation works. The hazardous waste contractor will be a specialist contractor with a hazardous waste collection permit.

11.16. Hazardous waste will be segregated into a separate well-marked covered container which will be kept secured by the Construction Site Manager. The skip will be kept at a designated location on site (possibly next to the site offices) and placed on a drip tray to prevent leakage.

11.17. All site personnel will be made aware of the requirement to segregate hazardous from non-hazardous waste.

11.18. For the avoidance of doubt, hazardous wastes include (but is not limited to):

- Vehicle batteries;
- Containers with residues of resins, latex, plasticizers, glues, adhesives, wood preservatives;
- Mineral oils or oily substances (including oily rags);
- Timber treated with Copper-Chrome-Arsenic timber preservative;
- Gas cylinders, and
- Asbestos.

11.19. When in doubt, site operatives are to check with the Environmental Monitor (MBH) on the nature of a waste / material.

11.20. The Construction Site Manager will ensure that the hazardous waste contractor provides a copy of the licence for the facility to which the hazardous waste is being taken (including any exported material). No hazardous waste materials will be allowed to leave the site prior to the provision of a hazardous waste consignment permit from ERA and following all the necessary documentation and licences. Consignment permits will be provided for every consignment of hazardous waste leaving the site (movement of hazardous waste within the site does not require a consignment permit).

11.21. The export of hazardous waste requires a special permit from ERA. A specialist hazardous waste disposal company, employed by the Contractor, will arrange for the correct completion of all forms and documentation related to the export of hazardous waste. The Construction Site Manager will ensure that copies of these completed forms are made available by the waste contractor and are kept for the

duration of the project. The Construction Site Manager will provide copies of the permits and forms to the Environmental Monitor (MBH).

Environmental Control Measure 4F – Treatment of Recyclable Waste

11.22. Materials to be recycled will be kept separate from other wastes and site personnel will be made aware of what types of waste can be recycled and where each should be deposited. This includes the soil to be reused on or off site.

Environmental Control Measure 4G – Treatment of General Waste

11.23. Skips for general waste will be removed by the Contractor to a licensed site. The skips should be identifiable so that hazardous waste is not dumped in them.

11.24. Effort will be made to minimise the amount of general waste and any materials that can be further segregated into separate waste fractions will be directed to the appropriate skip / bin.

11.25. The Construction Site Manager will be responsible to organise the removal of wheelie bins or other containers when they are full.

11.26. The Construction Site Manager will be responsible to ensure that the construction site remains litter free, not least due to the coastal location of the site.

Responsibilities

11.27. The Construction Site Manager will ensure that Certificates of Registration, Waste Permits and / or Waste Licences are applied for and in place in good time before works commence.

11.28. The Construction Site Manager will keep copies of the Certificates of Registration, Waste Permits and / or Waste Licences and check whether the conditions of these are met. Copies of these documents are to be made available to the Environmental Monitor (MBH).

11.29. The Construction Site Manager is responsible for ensuring the conditions of the Waste Permit are met on site.

11.30. The Excavation Contractor will engage the services of a specialist hazardous waste contractor prior to the commencement of works that may generate such waste.

11.31. The Construction Site Manager will ensure that the hazardous waste contractor provides a copy of his Waste Collection Permit and a copy of this permit will be made available to the Environmental Monitor (MBH).

11.32. The Construction Site Manager will ensure that the hazardous waste contractor provides a copy of the licence for the facility to which the hazardous waste is being brought. A copy of this permit will be made available to the Environmental Monitor (MBH).

11.33. The Construction Site Manager will ensure that the hazardous waste contractor provides a copy of all Hazardous Waste Consignment notes. A copy of these consignment notes will be made available to the Environmental Monitor (MBH).

11.34. The Construction Site Manager is to ensure that recyclable wastes are deposited in the waste management facility on site.

11.35. The Construction Manager is responsible to ensure that the site remains litter free, and that skips / bins are removed and replaced in a timely manner.

12. ENVIRONMENTAL CONTROL MEASURES SHEET 5:

Noise and Vibration

Environmental Control Measure 5A – Compliance with relevant Licences, Approvals and Legislation

12.1. In general, construction works where noise generated from that activity can be heard from outside the site boundary shall be carried out as per conditions imposed by PA or other relevant authority.

12.2. Any special working hours required for specific and extraordinary interventions will follow the established procedures for permitting such departures from the general conditions. Access to the site will follow the provisions of the Construction Management Plan.

Environmental Control Measure 5B – Excavation Noise and Vibration

12.3. The site personnel will be informed on noise and vibration sensitive receptors around the site (e.g., beach users, residences close to the site, the nearby hotels and restaurants and the Ghadira nature reserve).

12.4. If required, job-specific Method Statements will be drawn up for works near the more sensitive areas.

Environmental Control Measure 5C – Control of Noise and Vibration (General)

12.5. Environmental Control Measures in relation to Noise and Vibration may be split into two categories:

- Control of noise and vibration at source; and
- Controlling the spread of noise and vibration.

Control of Noise and Vibration at Source

12.6. Plant will be properly and regularly maintained. All plant to be deployed on site will be inspected by a qualified Engineer to confirm maintenance levels and safety for use at construction sites. Certificates for individual plant will be provided to the Environmental Monitor (MBH) prior to their deployment on site.

12.7. Machinery that is used intermittently will be shut down or throttled back to a minimum during those periods when not in use.

12.8. All vehicles and mechanical plant will be fitted with effective exhaust silencers and, where practicable, rubber tyres / tracks.

12.9. Where deemed reasonably practicable (and depending on technical working conditions and safe work methods), plant and site equipment will be located away from noise sensitive receptors.

12.10. Plant known to emit noise strongly in one direction should, when possible (and depending on technical working conditions and safe work methods), be orientated so that the noise is directed away from noise sensitive receptors.

12.11. Where deemed reasonably practicable (and depending on technical working conditions and safe work methods), haulage traffic will be routed away from noise sensitive receptors.

Controlling the Spread of Noise and Vibration

12.12. The Environmental Monitor (MBH) will take note of the noise and vibration climate around the site at each site visit. If the level of noise and / or vibration generated by the plant / excavation works is deemed to be excessive, *ad hoc* noise and / or vibration monitoring of the excavation works may need to be undertaken.

12.13. Should noise monitoring show that the decibel levels at the sensitive receptors exceed acceptable levels, the use of temporary noise attenuating devices or noise barriers could be considered.

12.14. Vibration monitoring will follow the provisions of the latest approved environmental monitoring programme.

Responsibilities

12.15. The Construction Site Manager should be familiar with the sensitive receptors and alert the Environmental Monitor (MBH) in good time prior to work commencing in these areas.

12.16. The Environmental Monitor (MBH) will take note of the noise and vibration climate around the site and liaise with the Construction Site Manager on further mitigation measures / *ad hoc* monitoring as deemed necessary.

12.17. The Environmental Monitor (MBH) will be responsible for organising noise and vibration monitoring in line with the approved environmental monitoring programme.

13. ENVIRONMENTAL CONTROL MEASURE SHEET 6:

Dust and Air Quality

Environmental Control Measure 6A – Compliance with relevant Licences, Approvals and Legislation

13.1. Air quality standards applicable to the assessment of local impacts upon human health and vegetation are set out in various EU Directives and are also embodied in Maltese legislation. Directive 96/62/EC on ambient air quality and assessment – also known as the Air Quality Framework Directive – establishes a framework under which the EU sets limit values for specified pollutants. Directive 1999/30/EC sets limit values for pollutants such as nitrogen dioxide and fine particulates (PM_{10}). Directive 2008/50/EC deals with ambient air quality and a cleaner air for Europe and sets assessment requirements for ambient air quality, measurement accuracy, and analysis of assessment methods. These Directives were transposed into Maltese law by S.L. 549.59 (Ambient Air Quality Regulations), which revoked earlier Legal Notices on specific air quality issues, as amended by Legal Notices 482 of 2011, 33 of 2015 and 415 of 2016.

13.2. In addition to the limit values specified in these Regulations, account will be taken of any more onerous specific controls specified within the development permit conditions and the Environmental Construction Site Management Regulations, 2007.

Environmental Control Measure 6B – Air Pollution Control

13.3. Burning of any material on site shall be strictly prohibited.

13.4. Haulage vehicles transporting friable or dusty materials to and from the site will be covered with a secured tarpaulin or similar material.

13.5. Vehicles on site will be regularly maintained to minimise emissions of exhaust pollutants to air.

13.6. Access and exit of vehicles will be restricted to the agreed access / exit points as identified in the CMP.

13.7. Vehicles on site will respect the speed restrictions in place.

13.8. Unpaved roads and verges shall be maintained in a compacted condition as appropriate and necessary.

13.9. Since haul roads are notorious sources of airborne dust on construction sites, sprinkling of haul roads and other dust generating areas will be used as needed to suppress dust emissions. Use of dust suppression chemicals on haul routes within the site may also be considered, especially in the dry months.

13.10. If required, dust from haul roads and operational areas will be collected using wheeled shovels if excessive amounts accumulate (especially during dry weather).

13.11. If required, the Contractor will provide site personnel to clean the site hard-standing area, and to be available to clean any mud or debris from the footpath crossovers.

13.12. Equipment likely to generate excessive quantities of dust shall be enclosed, shielded or where appropriate fitted with dust extractors, filters, and scrubbers, which shall be maintained in accordance with manufacturers' specifications. Any cutting and grinding operations on site shall be conducted using equipment and techniques which reduce dust emissions. Mist cannons or similar will be used to wet the excavation areas and the resultant spoil to contain the dust.

13.13. All stockpiles of construction and waste material will be positioned in such a way as to avoid contamination of water through wind, runoff, or accidental spillages respectively.

13.14. Dust suppression equipment shall be installed and used in stockpiling areas to ensure that dust or mud does not contaminate areas adjacent to the site.

13.15. The Environmental Monitor (MBH) will take note of dust leaving the site (through vehicular movement or wind entrainment) and will report on the situation in the monitoring checklist. If the visual inspections indicate an increased level of dust in the surrounding areas / haul routes, etc., the matter will be brought to the attention of the Construction Site Manager for action to be taken.

13.16. The Environmental Monitor (MBH) will visually monitor the operation of vehicles and plant and take note of any that emit excessive engine exhaust. Action will be taken to inspect and properly maintain any such plant or vehicles.

Responsibilities

13.17. The Environmental Monitor (MBH) will be responsible for organising air quality monitoring in line with the approved environmental monitoring programme.

13.18. The Construction Site Manager will be responsible to bring any observed impacts to the attention of the Environmental Monitor (MBH).

14. ENVIRONMENTAL CONTROL MEASURE SHEET 7:

Protection of Water Bodies

Environmental Control Measure 7A – Run-off and Sediment Control

14.1. The Contractor will be cognisant of wells, drainage, and water culverts in the area. These will be protected and maintained throughout the works period.

14.2. All works will be carried out at a safe distance from such drains and culverts to avoid accidental release into the drainage system.

14.3. Careful provision for systems to avoid pollution of the sea as a result of the works being carried out shall be taken by the Contractor, especially during works in the southern part of the site close to the shore.

14.4. Runoff from stockpiling / spoil holding areas shall be collected and / or intercepted in line with the CMP, to avoid contamination to land and the coastal zone.

14.5. Potentially polluting material, such as fuel oil, will be stored at all times on an impervious base surrounded by an impervious bund capable of containing a volume 10% greater than the total storage capacity.

14.6. Substances which have, either directly or indirectly, the potential to pollute water, will be procured on a strictly "as needed" basis to retain only the minimum necessary for operations on site.

Environmental Control Measure 7B – Wheel wash facility

14.7. The Contractor will set up a wheel wash facility/ies located strategically to service outgoing vehicles, including long vehicles and low loaders. The facility/ies will include a sediment trap and reservoir to collect draining water, with a pump if the reservoir cannot be placed underground, for the re-utilisation of water.

14.8. Vehicles exiting the wheel wash will drive over a stretch of concrete at least twice as long as the circumference of the largest tyre in use to ensure that the vehicles dry their tyres adequately before reaching the public road.

14.9. The Contractor will clean the sediment trap as often as required and will ensure that the drying surface is kept clean.

Environmental Control Measure 7C - Concrete

14.10. The washout from ready-mix concrete lorries will be contaminated with cement and is highly alkaline. Concrete washing on site will be restricted to washing of the chute; washing the mixer itself will be prohibited. Small, motorised mixers may also be washed.

14.11. Designated areas along the site will be used for concrete washing. These will involve a small plastic-lined skip or temporary pits. All sites will be located away

from the shore, the landscaped areas, the Knights Battery and its buffer, or the buffer around the burial site, and at no point will the wash water be allowed to flow down to the sea or leave the construction site.

14.12. The mixer will be hosed down and cleaned at the plant.

Environmental Control Measure 7D – Maintenance

14.13. There will not be any maintenance on site and the Construction Site Manager will frequently (at least once daily) patrol the site to identify leaking plant and send such plant off-site / deploy drip trays according to the nature of the leak.

Environmental Control Measure 7E – Silt curtain

14.14. Depending on the works at hand, if required, the Contractor will set up a tailor-made impermeable silt curtain with a floating boom and securely tied edges and weighed down or anchored at the bottom to contain any unintended run-off or when works are undertaken close to the coast.

14.15. The silt curtain shall be designed specifically for use at this site taking into consideration the sandy nature if the seabed and the presence of *Posidonia* reefs in the vicinity. The silt curtain design shall be discussed with and approved by the Environmental Monitor (MBH) and the Project Manager (MBH).

14.16. Once deployed, the Contractor will inspect the silt curtain on a regular basis to ensure that the necessary maintenance is undertaken in the event of rents or tears, so that the curtain remains fit for purpose throughout the duration of the works.

Environmental Control Measure 7F – Emergency Response

14.17. In the event of pollution of the drainage system or the sea, the Environmental Monitor (MBH) and the Construction Site Manager will be contacted immediately.

14.18. The Emergency Spillage Response Measures should be put into action.

Responsibilities

14.19. The Environmental Monitor (MBH) is responsible to ensure that appropriate water pollution prevention measures are put in place by the Contractor and that water sampling (if required) is carried out. Where standards are breached, he will carry out an investigation and in conjunction with the Construction Site Manager, he will ensure that remedial action is taken, and further samples taken to verify that the situation has returned to normal.

14.20. The Construction Site Manager is responsible for ensuring that spill kits are readily available in vulnerable locations.

14.21. The Construction Site Manager is responsible for ensuring that the spill response kits are adequately stocked at all times.

15. ENVIRONMENTAL CONTROL MEASURE SHEET 8:

Environmental Protection (including marine environment)

Environmental Control Measure 8A – General Measures

15.1. The Contractor will carry out the works in such a way as to minimise disturbance of the surrounding environment, including the marine environment, and to ensure that specified measures are adhered to. This is especially so in the case of works on or close to the shore.

15.2. The Contractor will be aware of the environmental designations in the area as identified by the various protective legislations or the Local Plans.

15.3. The development project overlaps with, or is located adjacent to the following protected areas:

- Area of Ecological Importance (AEI) Rdum mill-Ponta ta' l-Aħrax sa Rdum il-Ħmar (GN 400 of 1996);
- Area of High Landscape Value (GN 400 of 1996);
- Marine Protected Area - MT0000105 - Żona fil-Baħar bejn Il-Ponta ta' San Dimitri (Għawdex) u Il-Qaliet (Special Area of Conservation);
- Marine Protected Area - MT0000112 - Żona fil-Baħar madwar Għawdex (Special Protection Area);
- Water Body MTC104 (Good Ecological Quality Status) in the 2nd Water Catchment Management Plan (SEWCU-ERA, 2015).

Environmental Control Measure 8B – Protected species and habitats

15.4. Where a habitat and / or species are protected by specific legislation, the Contractor will follow the approved guidance in complying with the legislative requirements for that species.

15.5. The Contractor will schedule construction activities with regard to restrictions on the timing of the works with respect to protected species. This may require the Contractor to adjust the works programme to avoid crucial periods such as bird nesting.

15.6. The Contractor will notify the Project Manager (MBH) / Environmental Monitor (MBH) of the presence of any unexpected species or feature of ecological interest encountered during the excavation works.

15.7. If any protected animal species are encountered within the construction site during the works, these will be collected and released away from the works site. These may include reptiles, mammals, or birds.

15.8. The Contractor shall take appropriate steps to avoid the deterioration of natural habitats and the habitats of species in the areas adjacent to the construction site.

These measures will include clear demarcation of the construction site boundaries and erection of fencing or buoys as appropriate. Supervision of the works will ensure that no unnecessary impacts on areas outside the site boundary (by vehicles, vessels, or site operatives) will take place.

15.9. No site operation will result in pursuit, taking or attempting to take, deliberately capturing, or killing or attempting to kill, deliberately destroying, keeping, transporting, by any method any specimen of protected species on site except in the case that such species are found within the construction site and their presence there would likely lead to their injury or demise. In such cases, these specimens will be carefully collected and released in the general area but away from the construction site. The Contractor will notify the Project Manager (MBH) / Environmental Monitor (MBH) in such cases, prior to the release.

15.10. The Environmental Monitor (MBH) will take note of any unexpected species or feature of ecological interest encountered during the excavation works and will report on the situation in the monitoring checklist. The matter will be immediately brought to the attention of the Project Manager (MBH) / Construction Site Manager and any other relevant authority for timely action to be taken.

Environmental Control Measure 8C – Geology

15.11. As explained in the Excavation Works Method Statement, the site is s located in a complex geological setting, rendered more challenging by the presence of several fault lines that traverse the sloping terrain forming the shoreline at this location. Extensive ground investigation work has been carried out in advance of the project design, which has helped the identification of the site's complex geology and the building of a detailed stratigraphic model.

15.12. The site is not surrounded by third party properties, except for the public surface car park on the western boundary.

15.13. The main issues with the excavation phase relate to excavation and slope stability. This is relevant both to the natural slopes and the changes in level close to those areas that will be used a haul roads or vehicle access routes.

15.14. As shown in the stratigraphic model, excavation will take place in a diverse nature of materials and different strategies /. Mitigation measures will be required depending on the perceived level of terrain fragility and in relation to the required change in level at the boundary of the excavation.

Responsibilities

15.15. The Environmental Monitor (MBH) will be responsible for the coordination of visual operational monitoring of the areas adjacent to the site to ensure that they are not being negatively affected by the excavation and / or construction works carried out as part of the project.

15.16. The Perit responsible for the excavation will have overall responsibility and oversight of the excavation works and will be in charge of monitoring the

geological stability of the excavation works and the relevant slopes. He will liaise with the Project Manager (MBH) / Construction Site Manager / Environmental Monitor (MBH) and will provide regular updates and reports as necessary.

15.17. The Construction Site Manager is responsible for ensuring that any unexpected species or feature of ecological interest encountered during the excavation works is brought to the attention of the Project Manager (MBH) / Environmental Monitor (MBH) so that immediate action can be taken.

15.18. The Environmental Monitor (MBH) will be responsible for liaising with the Project Manager (MBH), and any other relevant authority on the findings (and remedial steps necessary) in the event of any unexpected species or feature of ecological interest encountered during the works.

16. ENVIRONMENTAL CONTROL MEASURES SHEET 10:

Dealing with Spillages

Environmental Control Measure 10A – Emergency Spillage Response Plan

16.1. Site personnel will be instructed to report any spillage immediately to the Environmental Monitor (MBH) (depending on circumstances, it may be appropriate for general operatives and machinery operators to report directly to the Construction Site Manager who will then report to the Environmental Monitor (MBH)).

16.2. The Environmental Monitor (MBH) will record the incident and report the spillage to the relevant stakeholders.

16.3. In the event of a spill, the following actions will be taken:

- All sources of ignition will be switched off in the vicinity of the spill until this is stopped and the area cleaned;
- The source of pollution will be identified, and the necessary corrective action taken to stop the flow;
- In the case of a heavy spill, the flow can be dammed with earth, sand, booms, etc;
- Action will be taken to divert the flow away from drains, culverts and the coast;
- Absorbent materials from the spill kits available on site will be used to mop up the spill (sand or absorbent materials should be used rather than detergents);
- The spill will be collected and not washed away into the drainage system or into the sea. (Washing will only make the situation worse and extend the pollution to other water bodies/drainage systems);
- If the spill has already reached drains, their entrances will be blocked and the flow diverted;
- Contaminated sand / earth / absorbent granules will be collected in sacks or skips; and
- A special bowser will be used to remove any pooled oil. All contaminated materials and collected oil will be treated as hazardous waste.

Environmental Control Measure 10B – Location of Emergency Spill Kits

16.4. A map indicating the location of all emergency spill kits will be available at the site office and on site. The location of spill kits will be notified to all site personnel.

Responsibilities

16.5. All site staff shall report any spillages of oil or chemicals to the Environmental Monitor (MBH) immediately (depending on circumstances it may be appropriate for general operatives and machinery operators to report directly to the Construction Site Manager who will then report to the Environmental Monitor (MBH)).

16.6. The Environmental Monitor (MBH) will be in readiness to implement at all times an Emergency Response Plan to spillage incidents.

16.7. The Environmental Monitor (MBH) will report all spillages to the relevant stakeholders.

17. ENVIRONMENTAL CONTROL MEASURES SHEET 11:

Dealing with Environmental Incidents

17.1. This section deals with environmental incidents, such as fires resulting in air pollution incidents but excludes spillages, which were covered in a separate section.

Environmental Control Measure 11A – Environmental Incidents

17.2. The Environmental Monitor (MBH) will be contacted as soon as possible where there is any incident that carries the possibility of negative environmental consequences (e.g., a fire resulting in an air pollution incident or a discharge to the marine environment).

17.3. Standard emergency procedures will be taken to get the incident under control and prevent injury or loss of life in the first instance.

17.4. In the event of an environmental incident, work in the area will be halted and the Environmental Monitor (MBH) will be called to the scene to assess the situation and to decide on initial responses and remedial measures required.

17.5. The Environmental Monitor (MBH) is responsible for alerting the Project Manager (MBH) and / or the relevant authorities (as necessary).

Responsibilities

17.6. Site personnel will contact the Construction Site Manager as soon as possible where there is any incident that carries the possibility of negative environmental consequences.

17.7. The Construction Site Manager will contact the Environmental Monitor (MBH) as soon as possible where there is any incident that carries the possibility of negative environmental consequences.

17.8. The Environmental Monitor (MBH) is responsible for alerting the relevant authorities (as necessary).

Appendix 1: Site Map

Site boundary

Legend

- Scheme site boundary
- Application site boundary

Mellieha Bay Hotel Redevelopment,
L-Għadira Il-Mellieħa

Map by:

Adi ASSOCIATES

Client: Mellieha Bay Hotel Ltd
Ref: MBHL08
Date: 10 / 2021

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Appendix 2: Excavation Plan


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+13.50
+13.10

16 APPENDIX C – EXCAVATION EMP

PA/01948/20 - PROPOSED EXCAVATION WORKS AND CONSTRUCTION OF HOTEL COMPRISING OF 359 GUEST BEDROOMS AND ANCILLARY FACILITIES. PROPOSAL INCLUDES LANDSCAPING, POOLS, RESTORATION/CONSTRUCTION OF RUBBLE WALLS AND RESTORATION OF PART OF THE COAST AND 2 LPG STORAGE TANKS AT MELLIEHA BAY HOTEL, TRIQ IL-MARFA, GHADIRA, MELLIEHA

ENVIRONMENTAL MONITORING PLAN – EXCAVATION PHASE

Version 1 (April 2024)

Report Reference:

En-Sure Ltd, 2024. Proposed Excavation Works and Construction of Hotel comprising of 359 Guest Bedrooms and Ancillary Facilities. Proposal Includes Landscaping, Pools, Restoration/Construction of Rubble Walls and Restoration of Part of the Coast and 2 LPG Storage Tanks at Mellieha Bay Hotel, Triq il-Marfa, Ghadira, Mellieha (PA/01948/20). Environmental Monitoring Plan – Excavation Phase (Version: 1). San Gwann, April 2024; iii + 16 pp + 1 Appendix.

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RESPECT THE ENVIRONMENT - KEEP IT DIGITAL

Quality Assurance

Proposed Excavation Works and Construction of Hotel comprising 359 rooms and ancillary facilities at Mellieha Bay Hotel, Triq il-Marfa, Mellieha
Environmental Monitoring Plan - Excavation Phase
April 2024

Report for: Environment & Resources Authority

Revision Schedule

Rev	Date	Details	Prepared by	Reviewed by	Approved by
00	Apr 2024	Submission to ERA	**Steven Treeby** Environmental Monitor	**Rachel Xuereb** Director	**Adrian Mallia** Managing Director

File ref: N:_Active Projects\OMC_Environmental Monitoring\ES_MBH001 - Mellieha Bay Hotel redevelopment project_EMP\EMMS-EMP\Excavation & Construction Phase\Mellieha Bay Hotel_Excavation Phase EMP_V1.docx

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ENVIRONMENTAL MONITORING PLAN – EXCAVATION PHASE

Introduction

1. In December 2019 the Applicant (Mr Brian Mizzi) submitted two planning applications, the first pertaining to the demolition of the existing hotel (PA/09876/19), and the second pertaining to the redevelopment (PA/01948/20).

2. Both applications were approved by the Planning Authority in May 2023.

3. The development is hereinafter referred to as 'the Scheme'. The location of the Scheme site is shown in **Figure 1**.

4. The Scheme was the subject of an Environmental Impact Assessment procedure. Following the conclusion of the EIA, the Environment & Resources Authority (ERA) issued a list of conditions to be annexed to permit applications as an approved document (**Appendix 1**). The approved document requests the submission of a Works Method Statement (WMS) and an Environmental Monitoring Plan (EMP) in accordance with the Terms of Reference (ToR) issued by ERA, prior to the commencement of works on site.

5. En-Sure Ltd has been engaged by the Applicant to prepare the Environmental Monitoring Plan for the redevelopment project. An EMP for the Demolition Phase of the project has already been prepared and submitted to the ERA. The Demolition Phase EMP was approved and has been implemented. This EMP now focuses on the Excavation Phase. An updated EMP will be submitted for the subsequent (construction) phases, as necessary. The EMP is an integral part of the WMS, which consists of three parts, as follows:

    - The Construction Management Plan – Excavation Phase;
    - The Environmental Management Method Statement (Excavation Phase); and
    - This Environmental Monitoring Plan - Excavation Phase.

6. The ToR do not prescribe the level of environmental monitoring to be undertaken. In October 2023, a first version of the Environmental Monitoring Programme was submitted to ERA. This was subsequently updated in December 2023 and has been followed throughout the demolition of the main hotel buildings, an activity that has been carried out since the beginning of January 2024. Following the demolition of the buildings, the next phase was the demolition of the ground slabs across the site. In view of this new activity, which included the use of hydraulic breakers, the EMP (Demolition Phase) was updated to include vibration monitoring.

7. This version of the EMP, which will focus solely on the Excavation Phase, builds on that for the demolition of the ground slabs and therefore, based on the characteristics of the site, the environmental monitoring programmes approved by the PA / ERA for other similar scale projects, the EIA findings, ERA's final report following the submission of the EIA Report, and the operational management requirements, the EMP (Excavation Phase) will address the following aspects:

- Air Quality (dust);
- Noise (including noise impacts on avifauna);
- Vibrations; and
- Marine environment.

Excavation Works Programme

8. As mentioned, the former hotel buildings were demolished between January 2024 and March 2024. The demolition of the ground slabs commenced in March 2024 and is currently ongoing. This is expected to be completed by the end of May 2024. Excavation will commence at the beginning of May and will continue till mid-June, when it will be suspended in view of the ban of excavation works in tourism zones. Excavation will then resume in October and will be completed by the end of the year. Excavation works will be followed by construction of the new hotel followed by finishing works. These latter stages, however, are outside the scope of this present EMP. A new or updated EMP will be formulated for the subsequent phases.

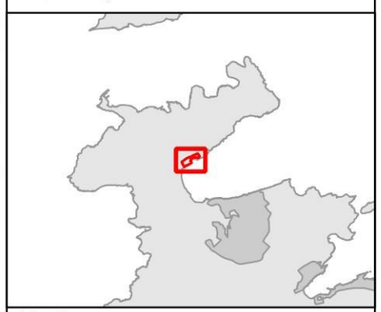
Figure 1: Location of Site

Location of site

Legend

Site boundary

Mellieha Bay Hotel Redevelopment,
L-Ghadira, Il-Mellieha



Map by:

Client: Mellieha Bay Hotel Ltd
Ref: ES_MBH001
Date: 10 / 2023

SIntegraM data/service, (2018), Developing Spatial Data Integration for the Maltese Islands, Planning Authority

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The Environmental Monitoring Plan

9. This EMP consists of five sections in line with the components described above and including operational management.

Air Quality (Dust) monitoring

10. PM_{10} levels will be measured using a real-time sampler and analyser (Kunak AirPro). This instrument uses an optical particle counter to count and classify particulate matter according to size, and then converts the size distribution into a mass measurement. The measurement principle is based on the scattering of the light source (a laser diode) by particulate matter, and the scattered light is measured using a focusing optics and a photo diode. The analyser corrects the effect of humidity using an embedded algorithm, thus preventing interference in high relative humidity conditions.

11. The monitoring method is indicative; however, the Kunak AirPro is MCERTS certified and has shown good correlation with the reference method for PM10 (EN 12341: 2023).

12. The primary advantages of using such a sampler are that:

    - Dust measurements can be viewed in real-time without requiring laboratory analysis of filters, thus enabling prompt action if set limits are exceeded due to the construction activities underway; by comparison, the reference method requires filters to be shipped to the lab and conditioned, thus delaying the results; and

    - A resolution of as low as 1 minute can be selected (compared to 24-hour samples in the reference method), which enables a more detailed analysis of the potential contributors to any peaks in dust levels.

13. The location for the air quality monitoring station is to the west of the Scheme site, close to the site access (see **Figure 2**).

14. A week-long baseline study was undertaken prior to the start of the works. Following the baseline study, continuous monitoring has been undertaken throughout the entire duration of the excavation works. This will continue. Operational monitors (see Operational Monitoring section below) also visually inspect the site and note the levels of dust generated by the various activities underway.

15. One-off monitoring in response to complaints can also be provided.

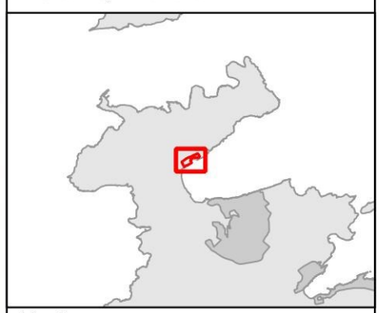
Figure 2: Location of air quality monitoring station

Air Quality Monitoring Station

Legend

Site boundary

Mellieha Bay Hotel Redevelopment, L-Ghadira, Il-Mellieha



Map by:

Client: Mellieha Bay Hotel Ltd
Ref: ES_MBH002
Date: 2 / 2024

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Noise

16. Based on the EIA and site observations, the closest noise sensitive receptors include:

- Residents of the beach rooms at Ghadira;
- Beach users and restaurant patrons at Ghadira;
- Guests of other tourism accommodation (Mellieha Holiday Centre and db Seabank Resort);
- Dwellings at Triq Dawret it-Tunnara, Mellieha; and
- Avifauna in the Ghadira Nature Reserve (N2000 site).

17. The noise monitoring plan is based on the consultants' experience in similar projects and on the requirements of British Standard (BS) 4142: 2014+A1:2019. For the assessment, reference will be made to BS 5228: 2009, as well as to the Interim Guidelines outlined by Dooling & Popper, 2016, in respect of the assessment criteria for avifauna. Having regard to the effects of noise on bird hearing, the survey will measure and record the descriptors in the octave band between 2 and 4 kHz.

18. Noise is expected to be generated throughout the excavation phase. Levels of impacts are expected to differ depending on the type of activity / type and number of machinery used, and the location of the construction activity in relation to adjacent ground levels and distance to sensitive receptors. Noise produced by construction equipment is typically intermittent, such as the impact noise from a piling rig; noise produced by construction equipment is a function of the type of equipment used. Construction noise also acts like a point source and will typically drop off at a rate of 6 dB per doubling of distance, although there is also likely to be an added component of additional attenuation that varies with the environment. On the other hand, noise is known to "travel faster" over open water, which is the reason for the monitoring station at Triq Dawret it-Tunnara.

19. **Figure 3** shows the noise monitoring stations. Having regard to the excavation works programme and the location and nature of the sensitive receptors, it is proposed that noise will continue to be monitored at four monitoring points (MP), namely:

- MP 1, MP 2 and MP 4, in respect of the human sensitive receptors; and
- MP 3: Ghadira Nature Reserve, in respect of the avifauna sensitive receptors.

20. Monitoring at MP1 and MP2 and MP3 will take place throughout the excavation works. Monitoring at MP4 will be undertaken for the initial weeks of the excavation works but this will be discontinued if monitoring results indicate that

the impact from the works is not significant and there are no third-party complaints.

21. In the case of all monitoring stations, the monitoring protocols will follow the requirements of BS 4142:2014 and BS 5228:2009. Noise will be measured for 60-minute periods and during the daytime (07.30 to 16.00hrs). Night-time monitoring is not required since no construction works will take place at night.

22. In the case of the measurements taken at MPs 1, 2 and 4 (for the assessment of the impact on the human sensitive receptors), the threshold of significant noise levels at the noise sensitive receptors will be determined by rounding the baseline noise measurement to the nearest 5 dB and comparing with the values in **Table 1** below. If the measured noise level with construction noise present exceeds the appropriate category value as explained in **Table 1**, then the noise disturbance will be deemed to be significant.

Figure 3: Noise monitoring stations

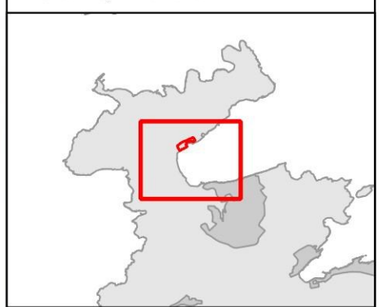
Noise monitoring stations

Legend

Site boundary

Noise monitoring points

Mellieha Bay Hotel Redevelopment,
L-Ghadira, Il-Mellieha



Map by:

Client: Mellieha Bay Hotel Ltd
Ref: ES_MBH001
Date: 10 / 2023

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Table 1: Threshold of significant effect at dwellings

Assessment category and threshold value period (L_{Aeq})	Threshold value, in decibels (dB)		
	Category A [A]	Category B [B]	Category C [C]
Night-time (23.00–07.00)	45	50	55
Evenings and weekends [D]	55	60	65
Daytime (07.00–19.00) and Saturdays (07.00–13.00)	65	70	75

NOTE 1 A significant effect has been deemed to occur if the total L_{Aeq} noise level, including construction, exceeds the threshold level for the Category appropriate to the ambient noise level.

NOTE 2 If the ambient noise level exceeds the threshold values given in the table (i.e. the ambient noise level is higher than the above values), then a significant effect is deemed to occur if the total L_{Aeq} noise level for the period increases by more than 3 dB due to construction activity.

NOTE 3 Applied to residential receptors only.

[A] Category A: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are less than these values.

[B] Category B: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are the same as category A values.

[C] Category C: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are higher than category A values.

[D] 19.00–23.00 weekdays, 13.00–23.00 Saturdays and 07.00–23.00 Sundays.

23. In the case of the measurements taken at MP 3 (for the assessment of the impact on avifauna), the threshold of significant noise levels at the noise sensitive receptors will be determined with reference to the Dooling & Popper (2016) Interim Guidelines for assessing the potential effects on birds from different noise sources, as outlined in **Table 2** below and interpreted as follows:

- **Not significant**: noise level below ambient noise level in the critical frequencies for communication. Masking of communication signals is not an issue;
- **Minor significance**: noise level below 93 dB(A) SPL but where the spectrum level of the noise is still at or above the natural ambient noise level. Masking of communication signals from noise will occur beyond that which already occurs from natural ambient noise. This may also result in other behavioural and / or physiological effects;
- **Moderate significance**: noise level above 93 dB(A) SPL but below 110 dB(A) SPL continuous exposure. Hearing loss and permanent threshold shift are unlikely to occur. However, noise might still temporarily elevate a bird's threshold, mask important communication signals, and possibly lead to other behavioural and / or physiological effects; and
- **Major significance**: Continuous noise level above 110 dB(A) SPL, or a single blast noise over 140 dB SPL (125 dB SPL for multiple blasts). Noise can potentially result in hearing loss, threshold shift, masking, and / or other behavioural and / or physiological effects.

24. In the case of all monitoring stations, monitoring will be carried out on a weekly basis. Monitoring will be reduced to fortnightly, or monthly sessions, or stopped altogether if the noise monitoring results consistently indicate that the impact from the construction works is negligible. The ERA will be notified of any such change in the monitoring frequency.

25. One-off monitoring in response to complaints will also be provided.

Table 2: Guidelines for Defining Direct Auditory Effects on Birds

Proximity Zones	Noise Level	Effect on Birds
1	Continuous noise level above 110 dB(A) SPL[1] lasting over 12 – 24 hours, or a single blast noise over 140 dB SPL (125 dB SPL for multiple blasts)	Noise can potentially result in hearing loss, threshold shift, masking, and / or other behavioural and / or physiological effects
2	Noise level above 93 dB(A) SPL but below 110 dB(A) SPL continuous exposure	Hearing loss and permanent threshold shift are unlikely to occur. However, noise might still temporarily elevate a bird's threshold, mask important communication signals, and possibly lead to other behavioural and / or physiological effects
3	Noise level below 93 dB(A) SPL but where the spectrum level of the noise is still at or above the natural ambient noise level	Masking of communication signals will occur beyond that which already occurs from natural ambient noise. This may also result in other behavioural and / or physiological effects
4	Noise level below ambient noise level in the critical frequencies for communication	Masking of communication signals is no longer an issue. However, faintly heard sounds falling outside the region of bird vocalisations may still potentially cause other behavioural and / or physiological effects
4+	Energy in noise at all frequencies is completely inaudible (i.e., falls below the level of the ambient noise)	No effects of any kind on birds

Note: Zone 1 is closest to the noise source

Vibrations

26. This aspect of the EMP is especially linked to the excavation works. There will be no rock blasting and hence, the vibration monitoring will take place mostly as a precautionary measure. Vibration sensitive receptors on site include the burial site at the northern boundary of the site, the Knights' battery and ancillary remains, and the nearest human receptors mentioned in the Noise section above.

27. Readings will be taken from three stations shown in **Figure 4**. Monitoring will take place in accordance with BS 7385-2:1993; vibrations will be measured in the form of weekly 15-minute continuous monitoring sessions during the excavation phase.

[1] The sound pressure level or SPL is an expression of the sound pressure using the decibel (dB) scale and the standard reference pressures 20 μPa for air and other gases.

28. Recordings from the monitoring sessions will be compared to building threshold values quoted by the Standard, as follows:

- Potential for complaints:

  The standard BS 5228-2:2009 gives the following guidelines on the effects of vibrations (extract from Table B.1):

  0.3 mm/s Vibration might be just perceptible in residential environments.

  1.0 mm/s It is likely that vibration of this level in residential environments will cause complaint but can be tolerated if prior warning and explanation has been given to residents.

- Potential for damage:

  BS 7385-2:1993 states that cosmetic damage may be expected in residential buildings at 15 mm/s at frequencies of 4-<15 Hz, 20 mm/s 15-<50 Hz and up to 50 mm/s at 50+ Hz. The Standard raises the threshold to 50 mm/s at frequencies of 4 Hz and above for reinforced structures.

29. In view of the length of the site and the location of the receptors, it is proposed that since the burial site and Knights' battery are located at the eastern extremity of the site, whereas the nearest human sensitive receptors are on the west, and the excavation works are planned to move from a west-to-east direction, the monitors will determine at each session whether monitoring will need to be undertaken from all or from only some of the monitoring stations.

30. Once the excavation works are completed, the construction phase vibrations are not expected to be such as to warrant regular monitoring. Monitoring will be stopped altogether if the results indicate that the impact from the development works is negligible. The ERA will be notified of any such change in the monitoring frequency.

31. One-off monitoring in response to complaints will also be possible.

Figure 4: Vibration monitoring stations

P:\Mapping\En-Sure\Environmental monitoring\ES_MBH002 - Melieha Bay Hotel demolition OMC

Marine Environment

32. Although no works will take place in the marine environment during this phase of the project, the development is essentially on the coast and in close proximity to the sea. It is therefore proposed that the environmental monitors will visually inspect the coast in the vicinity of the areas of works to determine if a silt curtain needs to be deployed. Additionally, baseline turbidity measurements will be taken from two points as shown in **Figure 5**. New baseline measurements will be taken before the excavation works commence. These will be compared with those taken at the start of the project.

Operational Management

33. In order to satisfy the Construction Management Plan and Works Method Statement (CMP/WMS) guidelines, and to be able to adjust the monitoring effort as the works progress (as described above), the Operational Management Team (OMT) will regularly visit the site and carry out a full inspection. Inspections will be conducted twice weekly, or as agreed otherwise with ERA, to observe work practices and assess the environmental issues (e.g., waste management practices, emissions, implementation of mitigation measures, etc). The operational monitoring of works will be recorded through photographic means.

34. These visits will help adjust the monitoring effort in accordance with the works at hand.

35. Operational management will include (but not be restricted to) the following components:

- Ensure that all works on site are carried out in accordance with the permit conditions;
- Ensure that works are restricted to within the site boundary and that there is no overspill into the marine environment;
- Ensure that any coastal habitats or features on or near the site are not adversely impacted throughout the course of the works;
- Ensure that all safeguards as laid down in the Construction Management Site Regulations, 2022 (S.L. 623.08) are followed;
- Ensure that efficient traffic management practices, in accordance with the approved CMP, are implemented;
- Ensure that the Scheme site is surrounded by a fence or other hoarding in line with local legislation to prohibit unauthorised entry and to mitigate against the spillage of construction material onto the surrounding areas;
- Ensure that the urban areas, including traffic and pedestrians, close to the Scheme site are not affected by dust emissions from the site. Presence of dust generated on site both on the ground and airborne will be observed;

Figure 5: Turbidity measurement locations (approximate)

- Ensure that emissions (especially dust) are kept low through the use of the mitigation measures outlined in the CMP/EMMS and visual monitoring;
- Ensure that inert waste generated from works on site is properly managed while on site or transferred off-site to an authorised waste management facility;
- Ensure that any potentially contaminated materials are properly handled and reported to the relevant authorities;
- Ensure that there is no refuelling or servicing of equipment, vehicles and other mobile machinery on site;
- Ensure that drip trays are available on site and used effectively in the event of leakages and that spill kits are available and used by trained personnel in the event of spillages of a polluting fluid;
- Ensure that efficient waste management practices, in accordance with local legislation and the permit conditions, are carried out; and
- Ensure that hazardous chemicals (including oils and lubes) are adequately managed in order to avoid ground contamination. Such materials to be stored away from the marine environment, drains, or culverts.

36. The Operational Management Team will report to the ERA on a weekly basis or as otherwise agreed with ERA prior to the start of the works.

37. In addition to the above, and as instructed by ERA, prior to the commencement of works on site. The entire perimeter of the works area was inspected, and photographic / video footage taken to record the situation of the land outside the site hoarding before the start of works. Footage of the seabed was also taken. This will serve as a baseline against which to compare the situation following the completion of works.

Appendix 1: ERA's Conditions for PA/09876/19 & PA/01948/20

Annex II: PA 09876/19 & PA 01948/20 – Conditions

General

1. The development and its operational use shall be fully contained within the footprint of the site as defined in the plans in Annex III hereof, and shall not be allowed to encroach onto the surrounding lands.

2. In the event of any discrepancy between the approved plans, the plans in Annex III hereof shall take precedence.

3. Prior to the commencement of any works on site a refundable bank guarantee to the value of €100,000 shall be deposited with the Environment and Resources Authority (ERA), to cover the fulfilment of these conditions to ERA's satisfaction. In the event that the applicant fails to fulfil these conditions in line with the indicated specifications, the outstanding bank guarantee or parts thereof shall be forfeited in favour of the Environment and Resources Authority (ERA). Its forfeiture would not, however, preclude the applicant from adhering to all other conditions contained in this development permission.

Permitting requirements

4. The proposal qualifies for an Environmental Permit for its operations. Application forms can be found on https://eris.eraportal.org.mt/.

Notification of works

5. Prior to the commencement of any works on site, ERA's Compliance and Enforcement Directorate (CED) is to be formally notified at least five (5) days ahead on: ced.consult.era@era.org.mt

Reserved Matter - Construction works

6. All works covered by this development permission (including material and temporary installations, vehicles and machinery used for the works as well as any material or waste generated by the works) shall be restricted to the areas approved for such purpose. Works outside such areas are prohibited and there shall be no encroachment or overspills onto surrounding land.

7. All works shall be carefully managed so as not to cause damage to any cultural features, habitat, or other features beyond the area and depth approved for development.

8. All works shall be subject to a comprehensive and reasonably exhaustive document intended to describe in detail the proposed interventions and works, for the execution

of the development with the least possible damage to the site and its surroundings, hereinafter referred to as the Works Method Statement (WMS). The WMS shall address all the relevant environmental considerations to ERA's satisfaction and shall follow the requirements set by the Authority in this document (**Annex I - Summary of EIA and AA**) and the terms of reference in **Appendix I**, as an approved document. No works shall commence on site prior to the approval of the WMS by ERA. Should the WMS be submitted as part of a wider construction management plan (or in parallel to any such plan as may be required by other authorities), the WMS shall be a distinct and self-contained section/ document, which ERA can assess directly without the need to peruse the entire construction management plan or cross-refer to other documentation. The WMS as approved by ERA shall take precedence over any other content, in the event of any discrepancy.

9. Uncontaminated inert material resulting from excavation, demolition and/or construction, shall either:
   i. Be used within the same site, as long as such use is in line with the approved plans and other conditions of this permit; or
   ii. Be transported in accordance with the relevant waste management regulations and deposited at sites duly authorised by the Environment and Resources Authority (ERA) to accept such waste.

10. Once the works have ceased, the waste generated from the execution of the development shall be transported in accordance with all the relevant waste management regulations and disposed of at facilities duly permitted by the Environment and Resources Authority (ERA) to accept such waste.

11. Any deposition of soil and inert material on any open or undeveloped land Outside the Development Zone or within any legally protected site, including the use of such soil or material for land reclamation or for the modification of site topography or landform, shall require prior clearance from the Environment and Resources Authority (ERA).

Reserved Matter - Landscaping plan

12. A detailed Landscaping Plan shall be submitted for the approval of the Environment and Resources Authority (ERA) within six (6) months from the issuing of this development permission. The landscaping plan (including a clear description of the landscaping approach, the type of species used, the planting layout, ancillary/preparatory works, etc.) shall respect the site context and the surrounding landscape, and shall be duly adapted to the coastal context, general topography/land contours and ecological characteristics of the site and its surroundings. The plan shall also conform to the following specifications:
   i. The planting, including any compensation for any uprooted trees, shall consist of appropriate indigenous and/or archaeophytic species, and due attention shall be paid to the avoidance of species and assemblages that are alien to the surrounding environmental and landscape context;
   ii. The plan shall clearly indicate the location of all existing, transplanted, proposed and retained trees/shrubs/vegetation within the site, including the respective scientific and vernacular names, as well as any measures that will be implemented

to prevent damage to any trees/shrubs/vegetation that will be transplanted and/or retained as well as to any other environmental features;

iii. The removal of any trees and/or invasive or otherwise alien species on site and in the Area of Study (refer to EIA Section 7 Figure 7.1) shall be carried out in accordance with the methodology of ERA's Guidelines on Managing non-native Plant Invaders and Restoring Native Plant Communities in Terrestrial settings in the Maltese Islands, or any updates, revisions or substitutes thereof, and shall include all the measures to be taken in order to avoid any further invasion within the site and its surroundings;

iv. The introduction of any species which is invasive or otherwise alien to the site or in its surrounding area of influence is prohibited; and

v. The plan shall also identify all other relevant interventions that are envisaged (e.g. earth mounding/re-profiling, fencing and existing rubble walls; any soft and hardened surfaces; green infrastructure, and any outdoor furniture).

Reserved Matter - Site restoration

13. The rocky shore is to be restored to its pristine state to the satisfaction of the Environment and Resources Authority (ERA), including redundant hard landscaping and any currently built footprint that will be removed or displaced as a consequence of the proposed redevelopment. In this regard, a Restoration Method Statement (RMS) shall be submitted for the approval of the Environment and Resources Authority (ERA) within six (6) months from the issuing of this development permission. Thereafter, the restoration works shall proceed in line with such RMS as approved by ERA, and shall comply with the timeframes indicated in such approved RMS.

Reserved Matter – Lighting Plan

14. A Lighting Plan shall submitted for the approval of the Environment and Resources Authority (ERA) within six (6) months from the issuing of this development permission. This Plan shall be compiled in line with the *Birdlife Malta's & NTM-FEE's Guidelines on Ecologically Responsible Lighting*. Furthermore, the development shall not be a source of light pollution, especially at night, and shall also include all necessary measures to pre-empt adverse impact on the surrounding natural, rural and coastal environment. To this effect, the plan shall conform to the following specifications:

i. Lighting shall be strictly limited to within the approved part of the site, and its height and orientation shall be designed in a manner that does not cause illumination beyond the developed site;

ii. There shall be no lighting of ancillary access roads, tracks and paths or other lighting beyond the developed area;

iii. The exterior lighting fittings and their supports shall be installed on the inner side of any peripheral landscaping, so as to be screened from the surrounding environment by means of the landscaping itself;

iv. All exterior lighting installed on site shall be located at low level, horizontally aligned, downward-pointing, fully-shielded and full cut-off (ULR = 0%). No luminaire globes, uplighters and/or high-level floodlighting are allowed;
v. All exterior lighting shall be of low-intensity 'warm light' colour with a temperature not exceeding 3000K;
vi. The average illumination levels of pathways shall not exceed 3 lux;
vii. The total luminous flux of all luminaires installed for the outdoor areas (like the pool areas, lobby entrance and main entrance) and balconies shall not exceed 10 lm/m^2. The task area of the outdoor areas shall be calculated excluding the areas of pools and other non-accessible green areas in between;
viii. Balcony lights shall be off by default and shall be designed and installed in a manner that avoids lighting beyond the balcony;
ix. Exterior lighting shall be intruder-triggered or motion-sensor lighting, so as to avoid continuous nocturnal lighting; and
x. Decorative lighting on rooftops and on plants/landscaping shall not be allowed.

Reserved Matters - Others

15. The following shall only be approved once the respective details have been concluded to ERA's satisfaction. No works thereon shall commence prior to such approval, and thereafter works shall adhere to all conditions and specifications that may be stipulated in such approval.

    i. The design and location of the Reverse Osmosis plant and outflow; and

    ii. The treatment of the burial site including landscaping, if any.

Infrastructure

16. New, extended or replacement of infrastructure services (including any required connections to the already existing public supply as well as any extension, renewal or modification of the public supply to serve the site) shall be located underground in appropriate ducts or trenches that are confined to already-existing road carriageways. Depth of trenches is to be kept to a reasonable minimum. This condition covers all infrastructural services including those related to water, electricity, sewerage, telecommunications and any other services to be installed on the site or on other land to service the site. No new poles, or overhead wiring/cables/pipework or off-street trenching are allowed and any currently existing poles, overhead services and redundant infrastructure are to be removed.

Runoff and effluent management, and containment of overspills/pollutants, throughout both construction phase and operational phase

17. All measures shall be adopted to avoid overspills and pollution of the adjacent rural and coastal environment, including through the action of wind, runoff and rough seas on any material stored/deposited on site or on potentially contaminated areas.

18. The development shall not result in any intended or unintended discharge of surface water (other than clean overflow from runoff-collection reservoirs), wash waters, operational overflows, sewage, spillages, seepages or leakages from the development site into the ground, onto any surrounding lands, or into the sea.

19. Rainwater or wastewater other than domestic sewage shall not be discharged into the domestic sewer. Foul sewer drains must be strictly segregated from storm-water drains.

20. Rainwater shall be segregated from all process areas that are potentially contaminated. If this is not possible, rainwater from areas where contamination by oil or fuel is likely (such as loading/unloading) shall pass through an adequately sized interceptor.

Subterranean features

21. Any infilled fissures (dagħbien), caverns, hollows, Quaternary deposits or other features of potential geological, geomorphological or palaeontological interest which are known or discovered shall be reported immediately to the Environment and Resources Authority and any other relevant authorities (e.g. the Superintendence of Cultural Heritage), and no further works or activities shall take place which would disturb or risk causing disturbance to these features, until these entities conclude their investigations.

Decommissioning

22. If at any point the development hereby permitted ceases to operate or is no longer being used for the approved use, it shall be demolished/dismantled and removed from the site, at the expense of the applicant. The site shall be completely restored to its pristine state to the satisfaction of the Environment and Resources Authority.

Appendix I: PA 09876/19 & PA 01948/20 – Terms of Reference for the Preparation of a Works Method Statement WMS

1. Introduction

1.1 The Works Method Statement (WMS) should be prepared to the satisfaction of the Environment & Resources Authority (ERA), in accordance with the Terms of Reference (TORs) provided by ERA. Generally, the MS should include the following information, in addition to any site re-instatement and other requirements as may be determined by ERA. The MS must be detailed, concise and to the point to avoid unnecessary delays during processing.

WMS and Construction Management Plans (or similar documents)

1.2 The WMS shall be submitted as a standalone document/report. Should the WMS be submitted as part of a wider construction management plan (or in parallel to any such plan as may be required by other authorities), the WMS shall be a distinct and self-contained section/document, which ERA can assess directly without the need to peruse the entire construction management plan or cross-refer to other documentation. The WMS as approved by ERA shall take precedence over any other content, in the event of any discrepancy.

2. General requirements

2.1 The WMS documents shall be available for public viewing through the Planning Authority's eApps system, shall be made available as a digital copy, and shall not be a restricted/controlled document, and include:

(i) A front page which clearly refers to the WMS for the project and its location;
(ii) A contents page;
(iii) A revisions sheet at the front of the document for any revisions/updates carried out to the WMS together with the dates of such revisions;
(iv) A page format allowing a footer and/or header on each page which should include the version and date of the document; and
(v) Page numbers as well as heading/paragraph numbering to facilitate review and cross-referencing.

3. Organization and responsibilities

3.1 Proposed project management arrangements for all phases of the execution of the works and site interventions are to be presented in the WMS. The document must include:

(i) An identification and contact details of the applicant/developer and the perit, and where relevant the environmental consultant/s (or any other relevant professional/specialist consultants), who shall be responsible for overseeing the execution and completion of all works in accordance with the MS. When deemed relevant by ERA, the contact details of the respective contractor/builder/mason (or similar) for each phase of the project shall also be provided. This may also include the details of the environmental manager (or any other equivalent qualified person), as approved by ERA. All of these details are to be provided as soon as available, but prior to the commencement of any works or preparations on site.

The contact information shall include name and surname, company name (as relevant), address, contact numbers, email, etc. (including emergency contact numbers outside operational hours); and

(ii) An undertaking by the applicant/developer and the perit to notify ERA, and where available the environmental manager (or any other equivalent qualified persons), of any changes to the work schedule in the WMS as approved by ERA within a reasonable period of time in advance (e.g. 1 week). Any urgent works which are necessary due to unforeseen circumstances and which are justified to require an immediate response may, at ERA's discretion, not require such prior notification. Details of such urgent interventions, including reasonable mitigation measures that are adopted on site, shall be reported to ERA and where available to the environmental manager (or any other equivalent qualified person), at the earliest. Urgent interventions remain the responsibility of the applicant/developer, and ERA reserves the right to seek suitable remedial action for any deleterious environmental impact or damage caused as a result of such urgent works.

4. Description of site and its surroundings

4.1 This WMS shall include a description of the following:

(i) A site plan showing a clear outline of the full extent of the site boundary and a clear indication of the surrounding area(s), which may be affected by the proposed works. Access routes to the site from existing official roads and quays (as relevant) shall be indicated, together with an indication of the routes to be taken by heavy vehicles and a traffic management scheme for all other vehicular traffic;

(ii) Details, including maps and drawings, are to be provided of any existing trees, vegetation and environmental features (e.g. rock outcrops, garrigue, etc.), that are present within the site and surroundings that may be affected.

5. Description of proposed works

5.1 The WMS shall seek the minimisation of adverse environmental impacts on the site and its surroundings (including landform, topography, habitats/ecology and natural/ cultural features). In particular, the WMS shall include the following matters:

Programme of works

5.2 A programme of works (PoW) describing all the sequenced phases of the works required to construct the development project, including:

(i) A timetable for the commencement, duration and expected completion of all phases of the project, including monitoring;

(ii) Details of when and how specific measures will be implemented to avoid impacting flora/fauna, particularly during critical periods; and

(iii) Details of all relevant dependencies on any other interventions (e.g. on preceding phases of the project or on preparatory interventions related to the project) or other relevant factors/uncertainties, as relevant.

Proposed interventions, operations and works

5.4 Works should be carried out during times of the day and months of the year, when it is proven to cause minimal disturbance to the natural environment (e.g. works during the night should be avoided). When not possible, a detailed justification for the proposed

timeframes(s) for carrying out the works, should be provided for ERA's approval prior to the commencement of such works;

5.5 A description of the envisaged site interventions, operations and works for each phase/stage of the execution of the project (i.e. what, how, when and where). This shall include the following, as relevant:

(i) Plans, elevations and sections (including conventional colours as relevant) regarding the proposed operations/works to be undertaken, including ancillary interventions as relevant;

(ii) A photographic survey of all areas where such interventions are proposed;

(iii) Site preparation, such as removal of any material from site (e.g. silt, debris bedrock, inert material, etc.), preparatory topographic interventions, pruning and uprooting of trees, cutting/removal of vegetation or any other species of concern, such as invasive species, and other interventions on natural features, etc. The removal of invasive species must be carried out by relevant qualified persons in accordance with ERA's guidelines[1];

(iv) Details and location of interventions on existing structures, including dismantling/reconstruction of rubble walls, restoration works, removal of illegalities, protection measures for existing buildings/structures/natural features, as well as interventions on terraces, etc.;

(v) Details of all temporary work-phase structures and safeguards (including materials used), such as hoarding, public safety structures, cordoned off areas, containment measures (e.g. bunding, sediment interceptors/ponds, silt curtains and any other spill containment measures as necessary), etc.;

(vi) Details of the types, quantities and source of materials (preferably recycling material already present on site), including water, stone (including rubble stone) and other resources to be used, consumed, stored and/or retained together with the respective EWC codes;

(vii) Details of storage and/or stock-piling of all materials on site, including wastes and their respective EWC codes;

(viii) Details of the removal and disposal of unwanted material (e.g. waste) from site, including the relevant EWC codes, the disposal locations and travel routes;

(ix) Details of the location and depth of dredging/excavation, volume and type of material envisaged to be dredged/excavated;

(x) Details of the type of lighting and noise/vibration arrangements to be adopted throughout the execution of the works;

(xi) Details regarding the extent of the project's impact on existing utilities such as storm sewer, sanitary sewer, water main, etc.;

(xii) Identification and description of existing access routes (both for vehicular & foot access) to the site during and after the execution of operations and works, including a description of how vehicles, machinery, equipment and/or tools shall be brought on site and subsequently removed, including travel routes;

(xiii) Details (including type and respective number) of vehicles, equipment, machinery and tools required to carry out the respective interventions, operations and works, including site plans showing where each will be sited during the execution of the works, and overnight, as well as safety measures to be implemented;

(xiv) Details of routes to be followed by vehicles during the construction phase; and

[1] https://era.org.mt/wp-content/uploads/2019/05/PlantInvaders-RestorationGuidelines-MEPA-2013.pdf

(xv) Details of the operations which may involve the use of land, including roads or footpaths, beyond the boundaries of the site, for operations related to the development and/or any mitigation/safety measures being proposed. Any interventions requiring the creation of a new access or modification of any existing access (e.g. extension, widening, realignment, formalisation, surfacing, and creation of passing points or turning/manoeuvring circles), should be clearly identified and kept to the bare minimum. Land and features which are difficult to restore satisfactorily (such as garrigue, natural coast, old rubble walls, etc.) should be avoided altogether.

Mitigation measures

5.6 A detailed description, including plans and drawings, of the mitigation measures proposed to avoid or reduce environmental impacts, as follows:

(i) Details of measures to be taken to avoid damage to trees, vegetation, other species (e.g. by allowing fauna to escape from affected sites) and natural habitats, as well as geological, geomorphological, landscape, agricultural, cultural or other features, within the area of work and surrounding area of influence;

(ii) Details of any mitigation measures proposed to ensure that no trampling, disturbance, parking/storage or land modification occur outside the permitted areas;

(iii) Details of any mitigation measures to be taken to avoid light and noise pollution, as well as vibration impacts, on the surrounding natural areas and any natural features as relevant;

(iv) Details of adequate measures to be taken, to ensure that no deposition of dust, mud, rubble or other materials, due to agents such as wind, runoff, wave action, subsidence or collapse, anthropogenic factors, or a combination of any of the above, occurs on the surrounding features and area, during on site work as well as during transportation of material to and from the site. Any overspills, leakages and contamination impacts from stockpiling onto adjacent areas are to be prevented through strategic positioning, interception and/or collection (e.g. wheel washing facilities); and

(v) Details of any mitigation measures adopted to contain any murkying, silting, smothering, scouring and pollution of any natural features, natural habitats, species and water bodies (terrestrial or marine) in the site and in the surrounding areas or located further downslope or downstream.

Site re-instatement

5.7 A description of the interventions required to re-instate the areas environmentally damaged during construction/excavation works. All temporary points, ramps and tracks providing access during construction/excavation phase shall be completely removed within six (6) months after the completion of the works and their sites shall be restored in line with this method statement.

6. Environmental monitoring

6.1 The WMS shall include a clear environmental monitoring and reporting programme describing how progress of all works will be monitored, recorded and reported in a timely

manner, in order to enable immediate action as required. This shall include any requirement for monitoring of the effects of the proposed operations and works, on the physical environment and natural features, such as vegetation, geology, etc., as relevant to the site and its context. Monitoring of works shall be recorded, e.g. by photographic means - before, during and after works. A copy of the photographs and other records shall be submitted on a regular pre-agreed basis. The following must be addressed:

(i) The environmental monitoring programme addressing the relevant works identified in the WMS and their risks to the natural environment, shall be submitted within a reasonable period of time in advance (e.g. 1 month), prior to the commencement of works on site, for ERA's approval. The monitoring programme shall be in place throughout the construction phase, or for any period specified by ERA;

(ii) The environmental monitoring programme shall identify: the methodologies and frequencies of monitoring; a map-based extent of the areas, which will be monitored; the frequency and mode of reporting; and, any baseline studies that may be required. Where possible, the programme shall also identify the threshold limits beyond which works should be halted or adjusted, due to unacceptable environmental impacts, and any other relevant triggers and parameters for pre-emptive, remedial or damage-limitation intervention. Specialist consultants for each specific monitoring requirement shall also be identified as relevant and their details submitted for ERA's approval;

(iii) The environmental monitoring programme shall be formulated by an environmental monitoring consultant (hereinafter referred to as "the monitor"), who shall have the necessary expertise and track record, to ensure that the monitoring programme is satisfactorily devised and implemented, and that the specialist consultants are duly present on site, as required, for effective monitoring. The monitor is to be approved in advance by ERA, after nomination by the applicant/developer. The monitor will be responsible for the immediate alerting of the relevant authorities when the thresholds are exceeded or in the case of cultural/archaeological/geological or other related discoveries;

(iv) The monitor and specialist consultants shall be engaged at the expense of the applicant/developer;

(v) The monitor shall ensure that all works are carried out in accordance with the ERA-imposed permit conditions, relevant approved drawings and other ERA-approved specifications, including the MS (as relevant); and

(vi) The monitor shall also be responsible for submitting regular monitoring reports in line with the approved arrangements. Both ERA and the monitor shall reserve the right to request further submissions or additional samples, and to impose any further conditions as deemed necessary during the progress of works.

7. Contingency plan

7.1 The WMS must include a contingency plan to cater for risks of accidental damage from the execution of the proposed operations, works and interventions and/or other unforeseen risks to the natural environment.

17 APPENDIX D - ENVIRONMENTAL PERMIT FOR QUARRY NR. HM33

Environmental Permit

Environment Protection Act (CAP. 549)

Permit number
EP 0097/20

Approved Document:
EP 0097/20/DOC1

The Environment and Resources Authority (hereinafter the Authority; the Competent Authority or ERA) in exercise of its powers under the Environment Protection Act (CAP. 549), hereby authorises:

Mr Paul Polidano o.b.o. Polidano Brothers Ltd. (hereinafter "the Permit Holder")
Company Registration Number: ***C 8884***

Of / Whose Registered Office (or principal place of business) is at:
Polidano Brothers Ltd.,
Triq Hal-Farrug,
Luqa, LQA 3078

For the extraction of hardstone mineral, recycling of inert waste, recycling of scarified material, production of aggregate and backfilling of an excavation void at:

Quarry no. HM 33,
Ta' Bellula,
Lapsi l/o Siggiewi

This permit is valid for **four (4) years** from the permit granted date below. An application for renewal of this permit is to be submitted at least **six (6) months** prior to expiry of this permit.

Signed	Date
Prof Victor Axiak Chairman	Permit Granted: 16 / 02 / 2022

Authorised to sign on behalf of the Competent Authority

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Conditions

1 General

The Permitted Installation shall, subject to the conditions of this Permit, be managed, controlled and operated as described in the Application, or as otherwise previously agreed in writing by the Authority.

Status Log

Detail	Date
EP application received	2nd July 2020
Permit Application determined by ERA Board	17th September 2021

1.1 Permitted Activities

1.1.1 The Permit Holder is authorised to carry out the activities and the associated activities specified in Table 1.1.1.

Activity	Description of specified activity	Limits of specified activity
Extraction of resource (rock mineral)	Extraction of rock mineral and crushing into aggregate	From extraction of rock mineral to dispatch of finished product
Deposit, recycling and stockpiling of inert waste	Recycling and crushing of inert material	From crushing of mineral to stockpiling and dispatch of inert aggregate
Production of aggregate	Crushing of mineral and stockpiling	From crushing of mineral to stockpiling and dispatch of inert aggregate.
Acceptance of scarified material	Crushing, storage and reuse of scarified material	From receipt of scarified material to storage and reuse of product.
Restoration of excavation void	Backfilling of excavation void with inert waste for final restoration purposes.	From receipt of permitted inert waste to backfilling of excavation void.
Associated activity of maintenance of equipment	Maintenance and repairs of own equipment carried out as required.	From maintenance / repair activity on equipment to appropriate recovery/disposal offsite of any waste generated on site an authorised facility either locally or abroad.

1.2 Site

1.2.1 The activities authorised under condition 1.1.1 shall not extend beyond the Site, as shown on the Site Map in Schedule 3 to this Permit.

1.2.2 The Authority may also request implementation of further dust abatement measures as deemed necessary.

1.2.3 Whenever there is a conflict between the conditions of this Permit and approved documents, the conditions of the Permit shall prevail.

1.2.4 A phasing plan with timeframes for the restoration of the lowest south western end of the quarry and the stockpiling area is to be submitted within six (6) months of the granting of this permit for the Authority's approval. Such a submission is tied the bank guarantee of €5,000 as stipulated in condition 1.3.14.

1.3 General Conditions

1.3.1 The conditions and obligations of this permit are without prejudice to any other regulation, code of practice, conditions or requirements requested by other Authorities or entities, including but not limited to, the Planning Authority, the Occupational Health and Safety Authority, Transport Malta and the Malta Resources Authority.

1.3.2 This permit is granted saving third party rights. The Permit Holder is not excused from obtaining any other permission required by law.

1.3.3 In these conditions and their interpretation, all terms shall have the same meaning as that assigned to them in CAP 549 Environment Protection Act and its subsidiary legislation.

1.3.4 The Permit Holder has the sole responsibility to ascertain compliance with legal obligations, permit conditions and to undertake activities on and off site in line with good environmental practices at all times.

1.3.5 The Authority may carry out pre-set or unannounced compliance or monitoring compliance checks that vary in frequency according to the site's compliance with the permit conditions and safeguarding of natural assets. Any checks or audits carried out by the Authority may be made at the Permit Holder's financial expense at a rate and arrangement communicated by ERA.

1.3.6 The Authority's representatives may inspect and photograph any part of the site and ask for any closed or locked areas to be opened and may demand to be provided with any proof, documentation, plans, receipts or any other records.

1.3.7 The Permit Holder shall maintain a register of third-party complaints. The register shall record the details of the complainant(s) if available, the date, location, source and nature of the complaint and the corrective action undertaken, where such action proves necessary.

1.3.8 The Authority may add, amend, delete or substitute any of the conditions of this permit after notifying the Permit Holder of its intention and after describing the

changes to the Permit Holder. This, without prejudice to any prevailing circumstances that would preclude the Authority from following such a procedure.

1.3.9 The Permitted Installation shall be managed, controlled, supervised and operated by staff that are aware of the importance of environmental protection and suitably trained on the requirements of this Permit. All staff shall be provided with adequate training and written operating instructions to enable them to effectively carry out their duties.

1.3.10 Upon the joint application of a Permit Holder and a proposed transferee, the Permit Holder may request to transfer an environment permit. The permit shall not be transferred from the Permit Holder without prior approval from the Authority. Upon the Authority's decision to transfer the permit to the transferee, all rights, obligations, liabilities shall subsist onto the transferee.

1.3.11 The Authority may suspend or revoke this environmental permit in line with the provisions of CAP 549.

1.3.12 The permit is valid for a period of **four (4) years** from the date of the granting. The Permit Holder may apply for a renewal to this permit expressing his/her intention at least **six (6) months** prior to the expiry of the permit. The permit will be considered renewed once the official renewed permit is issued by the Authority.

1.3.13 This permit is issued against a bank guarantee of **€14,100** which shall be renewed annually. This guarantee will have to be maintained throughout the validity of the permit. Following renewal and/or variations to this permit, the Authority may require amendments to the Bank Guarantee.

1.3.14 The Bank Guarantee shall remain in place for the duration of validity of this permit and shall only be released upon confirmation of full compliance with the permit conditions by the Authority. The sum of €5,000 shall be released from the financial guarantee by the Authority upon the permit holder's request, following the completion of the works described in Condition 1.2.4 and after verification by the Authority that the works have been carried out to its satisfaction.

1.3.15 The Authority may take part or all of the bank guarantee if the Permit Holder fails to take necessary action or fails to fulfil his legal obligations under the Act or its subsidiary legislation thereof, in cases of non-compliance with these permit conditions, or in cases where environmental integrity is threatened. This bank guarantee is without prejudice to any environmental liabilities incurred by the Permit Holder through failure to adhere to permit conditions or any other works/activity carried out on site. Should the Authority forfeit the Bank Guarantee either in part or in full, the Permit Holder shall ensure that this is replenished without undue delay, in any case not exceeding 2 months from the date of forfeiture.

1.3.16 In cases where the bank guarantee does not cover the expenses incurred by the Authority to take remedial action on the Permit Holder's behalf, the Permit Holder is to financially reimburse the Authority of all the expenses incurred within.

1.3.17 A copy of this permit shall be available at all times at the site office, including any Variation Notices or amendments to it.

1.3.18 The Authority may request additional monitoring and/or review of operational practices and commission any audits/reports as deemed necessary to address any circumstances that may affect the quality of the surrounding environment, at the expense of the Permit Holder.

1.3.19 Without prejudice to condition 1.3.18, the Authority may take any action deemed necessary including but not limited to the suspension of any activity/operation until investigations are concluded.

1.3.20 Any incident including accidental release of liquid, solid or gaseous materials from the site that could be regarded as causing environmental damage, or as posing a threat of environmental damage, shall be reported not later than within 24 hours to ERA.

1.4 Operational Changes

1.4.1 The Permit Holder may apply for a variation in permit and shall seek the Authority's written agreement prior to any operational changes, by sending to the Authority:

a. Written notice of the details of the proposed change, including an assessment of its possible effects (including changes in emissions and waste production) on the environment from the Permitted Installation;
b. Any relevant supporting information (e.g. chemical/fuel consumption, technical details, changes in the type/use of substances/mixtures, etc.);
c. Assessments and drawings, and;
d. The proposed implementation date.

Any such change shall only be implemented following the issue of a variation of the permit by the Authority.

1.4.2 Permit Holder shall notify the following matters to the Authority in writing at least 10 working days prior to their occurrence:

a. Any change in the Permit Holder's trading name, registered name or registered office address;
b. Any change to particulars of the Permit Holder's corporate identity.

1.5 Improvement Programme

1.5.1 The Permit Holder shall complete the improvements specified in Table 1.5.1 by the date specified in that table, and shall send written notification of the date of completion of each requirement to the Authority on ced.facilities@era.org.mt within 10 working days of the completion of each such requirement.

Table 1.5.1: Improvement programme

Reference	Requirement	Deadline

1.	Implementation of quarantine area.	Within 3 months of granting of the permit.
2.	Installation of bunding for the storage of oil and fuel as per condition 2.2.4.	Within 3 months of granting of the permit.
3.	Implementation of storage bins (griezel) for the stockpiling of aggregates and inert waste material.	Within 6 months of granting of the permit.
4.	Shifting of the stockpiles to the location as proposed in Schedule 3B of the permit.	Within 8 months of granting of the permit.

2. Site Infrastructure and Equipment

2.1 General Site Infrastructure

2.1.1 The site perimeter shall be clearly delineated either by a chain link fence, bollards or low walls. During non-operating hours the site shall be securely closed and totally inaccessible to third parties, both by vehicle and on foot. The site must be well secured at all times.

2.1.2 The designated and labelled quarantine area shall be kept within the site boundary to temporarily hold unpermitted wastes that may inadvertently enter the site. A non-leaking skip or similar contained structure shall be utilised for the temporary storage of unpermitted waste. The quantity of waste in the quarantine area shall not exceed the capacity of said area at any given time.

2.1.3 The entrance/exit area to be Permitted Site shall be constructed by compacted gravel and shall be regularly cleaned so as to prevent vehicles from transporting dust and waste onto public roads.

2.1.3 A vehicle wheel wash/ wheel dip (or similar mitigation measures) shall be installed and maintained before the main exit of the Permitted Site so as to prevent vehicles from transporting dust and waste onto public roads.

2.2 Storage Areas

2.2.1 All storage of materials, fuels, oils and waste shall take place only in areas with impervious ground and where thorough clean up and site reinstatement can be readily undertaken.

2.2.2 Bulk storage tanks for fuels, oils and chemicals, and associated bunding and pipe work shall be visually inspected at least twice a month. Such records shall be included in the site operational log.

2.2.3 All small storages of oils and lubricants used for everyday quarry operations shall be equipped with a containment system such as drip trays in order to prevent leakages or spillages.

2.2.4 The storage of tyres shall be segregated from other wastes and the structure within which the tyres are stored is to be adequately equipped with fire hydrants that are regularly maintained and serviced by the supplier. At any time, the storage of used tyres shall not exceed a skipload.

2.2.5 Any storage of fuel oils or lubricating oils on site must be kept in leak proof containers and stored in a bunded area that is capable of holding 110% of the total volume of the stored material. The Permit Holder shall also ensure and take all precautions in his competence to avoid any leakages or spills from liquid or solid material that can cause environmental harm. Filling and off-take points shall be located within the bund, which shall not have any drainage connections for rainwater.

2.2.6 The storage of other liquids in drums or containers, other than fuel oils, lubricating oils or water, or approved dust flocculants, is strictly prohibited on any part of the site.

2.2.7 The storage of waste oils in large quantities is also prohibited on site. This waste is to be disposed of at a licensed facility that is authorised to accept this type of waste and is to be transported in robust, leak-proof drums via a registered waste carrier in possession of a valid Class D3 permit. Receipts of such transfers and documentation from the licensed facility to which this waste has been transferred are to be kept and provided whenever requested by the Authority's representatives. Waste oils shall not exceed more than two (2) 45-gallon drums in volume.

2.3 Equipment on Site

2.3.1 The weighbridge shall be maintained, calibrated and certified by a warranted engineer or by the equipment's manufacturing company within three months from granting of the permit, and once every year thereafter. The annual certificate is to be submitted to the Authority annually as part of the AER as per condition 4.4.2.

2.3.2 All plant equipment and technical means used in operating the Permitted Installation shall be maintained in a good operating condition and without causing polluting emissions, leaks and spillages. Maintenance records of the above shall be kept by the Permit Holder and shall be made available to officers of the Authority for review upon request.

2.3.3 All equipment is to be installed and operated in accordance with the manufacturer recommendations, so as to minimise the release of dust to air, land and water.

2.3.4 During all operating hours of the facility there shall be at least one fully functional wheel shovel per tipping face on site.

2.3.5 On-site fueling and maintenance area shall be carried out at a dedicated impermeable and contained area so as to ensure that any spills are easily cleaned up. Spill kits shall be readily available at this area.

2.4 Maintenance Areas

2.4.1 All vehicle and equipment maintenance is to be carried out on an impervious surface where a thorough clean-up of fuels, oils or any other hazardous materials can be readily undertaken. Any activities that involve grit, sand or glass blasting are strictly prohibited.

2.4.2 The cleaning of vehicles, equipment and mechanical body parts shall be carried out on an impervious surface.

2.4.3 It is prohibited to store waste mechanical parts or any other waste on site, unless this is done in a closed structure (not open to the elements) constructed on impervious ground capable of containing any accidental spills of fuels, oils or any other hazardous materials. This storage cannot exceed a period of more than three (3) months or surpass one truck load in volume. Any activities that involve grit, sand or glass blasting are strictly prohibited.

2.4.4 It is prohibited to store mechanical parts containing oil, unless this is done in a closed structure (not open to the elements) that has impermeable ground and able to contain any spills within the closed structure. Large mechanical parts or spares not containing oils can be stored outside subject that such parts are certified by an engineer that they do not contain any oils or fluids.

3. Operational Procedures

3.1 Waste Acceptance

3.1.1 This site is authorised to accept inert waste that originates from excavation activities only as per Table 3.1.1 below and Schedule 1. **Sludges or dredged material are prohibited from entry. Tarmac or bitumen products originating from road works are prohibited for backfilling.**

Table 3.1.1

Waste Type	Description of Waste
Excavation Waste	Waste that originates from rock excavation. This waste shall be free of soil, trees, shrubs or any other agricultural content
Demolition Waste	Waste that originates from the demolition of structures. This waste is to consist of stone slabs and concrete planks or concrete beams only and **shall not** contain any other waste type such as aluminum, wood or iron apertures, pieces of clothing, furniture, household goods, mattresses or any other waste. **This waste is to be separated at source and not at the backfilling site of quarry.**
Extractive Waste	Inert waste generated from the extraction of mineral.
Scarified Waste	Waste that originates from roadworks. To be stored in area specified in Schedule 3B.

3.1.2 Any mixed waste inadvertently entering the site is to be separated from inert waste prior to being backfilled on site.

3.1.3 The Permit Holder is to apply the precautionary principle during the waste acceptance phase and refuse the entry of any truck loads whose content is not specified or in cases where there is uncertainty of what the truck consists of.

3.1.4 Trucks using this site as a backfilling/recycling facility are to enter the site only from the main gate and staff on site is to visually inspect every truck load that enters the site. The site entrance/weighbridge operator is responsible to accept or refuse the entry of trucks carrying waste into the site.

3.1.5 The loaded trucks are to proceed to the waste separation area upon clearance from the site entrance/weighbridge operator and start unloading the waste in the locations indicated by the staff. Staff on site is to ascertain that the load does not contain hazardous waste.

3.1.6 The vehicles are to tip the waste at the recycling/backfilling area and exit the site after the staff on site indicates to the driver that the vehicle can proceed to exit the site.

3.1.7 Staff on site is to refuse the entry and disposal of any truckloads of waste that is known to have originated from contaminated sites, decommissioned petrol stations, old fuel depots, fuel storage areas etc. During such occurrences the measures listed in conditions 3.1.8 to 3.1.9 are to be followed accordingly. Such measures are also to be taken when staff on site observes oil or diesel stained debris amongst the rubble or detect a fuel smell emanating from the tipped waste at the waste separation area.

3.1.8 In the event that a truck load contains heavily mixed waste or waste that cannot be backfilled/recycled, the staff on site is to re-load the unacceptable waste on the truck that has delivered the unacceptable load and direct it to a licensed facility authorised to accept such material. Staff on site is to take note of the truck registration plates, date, time and load content.

3.1.9 In the event that staff on site is not able to reload the unaccepted waste load back on the truck that delivered the unacceptable waste the waste carrier permit number and registration plate of the truck shall be noted. The load of unacceptable waste is to be temporarily stored in the quarantine area and then transferred at the Permit Holder's expense to a licensed facility that is authorised to take such waste. Staff on site is to keep note of when unaccepted waste loads temporarily stored in the quarantine area are transferred to other licensed facilities in terms of time, date and truck registration numbers that affected the transfer of such waste and the receipts of the authorised facility where the waste was disposed of.

3.1.10 The Permit Holder may refuse the entry of vehicles that repeatedly deliver unacceptable waste loads on site after notifying the Authority of his/her intention to take such action.

3.1.11 The mechanical wheel shovel operator shall spread the tipped inert waste and sort the material, in terms of inert and non-inert.

3.1.12 The separated non-inert waste shall not exceed the capacity of the approved quarantine area.

3.1.13 The Permit Holder shall at no time refuse entry to any vehicle registered with the Authority to transport inert and Construction and Demolition waste, unless such waste is not fit for disposal in a facility permitted to accept inert material. This is without prejudice to other ancillary permitted activities onsite.

3.2 Waste Storage and Handling

3.2.1 The Permit Holder shall ensure that all operations authorised in accordance with this Permit are carried out in an orderly manner and in such a way as to cause the least possible disturbance to the surroundings.

3.2.2 No storage of waste, equipment or materials is permitted on property outside the site premises.

3.2.3 All wastes (other than inert waste) shall be stored within a designated impermeable and controlled storage area(s) prior to ultimate disposal. Wastes to be recycled shall be stored in a designated container or area and shall not be mixed with other wastes.

3.2.4 Inert waste shall be backfilled in three metre heaps and properly compacted. Infilling shall occur in a phased approach from within the quarry void. No access to areas surrounding the quarry rim and dumping of material from quarry rim is permitted.

3.2.5 In the event that unaccepted waste is tipped at the tip face, the Permit Holder and the staff on site are liable and responsible to retrieve that waste by every means possible to them. Should the Permit Holder not be in a position to carry out the retrieval operation, the Permit Holder is to sub-contract equipment or personnel to retrieve such waste on his behalf.

3.2.6 The storage of hazardous **waste generated on site** only shall comply with the requirements of S.L. 549.45 - the Waste Management (Activity Registration) Regulations.

3.2.7 Liquid and hazardous waste shall be stored in a labelled, closed container(s) within a designated impermeable and controlled storage area(s), equipped with an appropriate bunding system, prior to ultimate disposal. Wastes of different natures shall not be mixed in the same container.

3.2.8 No storage of waste destined for disposal is permitted for a period exceeding 12 months. No storage of waste (other than own-site inert waste) destined for recovery is permitted for a period exceeding 3 years.

3.2.9 Unless otherwise agreed with Authority, all stockpiles of inert material are to be located and managed in such a way as to avoid contamination of air or water through wind or run off respectively.

3.3 Production of aggregate

3.3.1 The crushing of extracted hardstone and inert waste shall be done through mechanical crushers equipped with dust suppression systems as per approved document EP 0097/20/DOC1.

3.3.2 Crushing of inert material and production of aggregate through mechanical crusher waste shall be carried out without significant dust emissions. Should the Authority deem it necessary, the Permit Holder is to submit a monitoring proposal as per condition 3.5.3.

3.3.3 The inert material that results in the waste separation shall be crushed on site and the other non-inert materials that result from the waste separation shall be disposed of at licensed facilities that are authorised to accept the waste.

3.4 Waste Disposal

3.4.1 Records shall be kept for the disposal of all hazardous waste generated from the processes and operations on site, including EWC Code, description, quantities, date of removal, contractor name (including for transport), consignment note number and place of disposal / recovery. The records shall be maintained for a minimum period of 5 years and be made available, upon request, to the Authority.

3.4.2 Disposal of wastes shall be managed accordance with the legal obligations of S.L. 549.63 – the Waste Regulations.

3.4.3 Off-site disposal of wastes may only take place at a facility licensed for that purpose.

3.4.4 The incineration of any type of waste or any other material on site is strictly prohibited.

3.4.5 On-site disposal of unpermitted wastes by any means including disposal to drain or surface water, burying or deposition on land is prohibited, unless specifically approved through a Variation of this Permit.

3.4.6 Disposal certificates shall be kept on record and made available for inspection for a period of five (5) years from their date of issue and shall be made available, upon request, by the Authority.

3.4.7 The Permit Holder shall make use of the services of a registered waste carrier for the transport of waste from the site in accordance with S.L. 549.45. Where the company removes wastes using its own transport the vehicle(s) must also be registered as a waste carrier in accordance with S.L. 549.45.

3.4.8 All hazardous waste transferred off the site and every individual movement of hazardous waste shall be accompanied by a valid consignment permit and consignment note obtainable from the Competent Authority.

3.5 Emissions to Air

3.5.1 All processes which generate significant levels of airborne contaminants (such as dusts, toxic gases, and odorous chemicals) beyond the site boundary shall be fitted with abatement measures designed in such a way as to avoid local impacts.

3.5.2 Emissions to air shall arise from the emission points specified in Table 3.5.2, as per the description in the submitted EP application.

Table 3.5.2

Emission reference	Source
Source 1	General Quarry Area
Source 2	Crusher
Source 3	Crusher
Source 4	Sieve
Source 5	Sieve
Source 6	Sieve
Source 7	Sieve

3.5.3 The Authority may request monitoring of emissions to air listed in Table 3.5.2 which shall be undertaken in accordance with the terms of reference provided by the Authority.

3.5.4 ERA recommends that diesel (gas oil) generators, boilers and fixed crushers shall have a sulfur content of not greater than 0.1%.

3.5.5 The co-incineration of any material or additional fuel including engine or other waste oil is strictly prohibited. Any change in fuel type shall require the notification and approval of the Authority prior to commencement of its utilisation.

3.5.6 Should the Permit Holder intend to install equipment, which could lead to additional emissions to air (e.g. boiler, etc.), a variation of this Permit must be secured prior to installation and operation of this equipment.

3.5.7 In the event of malfunction or breakdown leading to abnormal emissions from equipment, the Permit Holder must:

a. Investigate immediately and undertake corrective action, and
b. Adjust the process or activity to minimise those emissions, and
c. Record the events and actions taken.

3.5.8 Further to condition 3.5.7, the Permit Holder shall provide ERA with details of the specific cause of the malfunction and the remedial steps taken or to be taken to address the malfunction.

3.5.9 All abatement equipment and ducting shall be cleaned and maintained on a regular basis, as per manufacturer specifications. Records of such maintenance shall be kept in accordance with Condition 4.3.1.

3.5.10 The Permit Holder shall prevent or where that is not practical, reduce fugitive emissions of substances to air from the Permitted Installation. Particular areas of

the operation which may generate dust should be regularly wetted down to mitigate dust emissions onto the surroundings.

3.6 Effluent Discharges

3.6.1 No discharges to surface or ground water shall take place from the Permitted installation.

3.6.2 The Permit Holder shall undertake all necessary measures and precautions to prevent spillage of materials such as waste oils, lubricant oils and any other materials that may potentially contaminate the environment.

3.6.3 Spillages of oil or other hazardous material shall receive immediate attention to prevent escape to drain, surface water, groundwater or land. All such storage areas must be appropriately contained. Spilled material shall be disposed of in sites permitted under the relevant environmental regulations to accept such waste. It is the Permit Holder's responsibility to ascertain that such waste is properly disposed of.

4. Site Management

4.1 Staff Obligations and Responsibilities

4.1.1 All employees authorised by the Permit Holder to undertake waste management activities on his/her behalf, shall be fully conversant with the obligations of this permit and shall be individually aware of their responsibilities and liabilities in observing the conditions of this permit. They shall be provided with adequate professional technical development and training and written operating instructions to enable them to effectively carry out duties.

4.1.2 At all times during operative hours there shall be:

a. At least one employee controlling the entrance of the site and visually inspecting incoming waste during backfilling/recycling operations,
b. One employee to operate the mechanical wheel shovel;
c. One employee to operate crushers and graders

4.1.3 One member of the staff shall be nominated as the Technically Competent Person (TCP) of the site, whereby this person is to physically represent the Permit Holder during the times when the Permit Holder will not be available.

4.1.4 Where the Permit Holder is also the designated TCP for the facility, a delegate TCP should also be appointed to represent the Permit Holder/TCP during the times when the Permit Holder/TCP will not be available.

4.1.5 The TCP is responsible for the implementation of all the obligations stipulated in this permit, must supervise the rest of the staff on site and shall be the Permit Holder's technical focal point for the implementation of the conditions of this permit including during inspections. The TCP is completely responsible to ascertain that all permit conditions are being adhered to and that unauthorised waste does not enter the site.

4.1.6 In the event of any short or long periods of leave of absence taken by the TCP for a period exceeding 10 days or change in the TCP, the Permit Holder is obliged to find a replacement for that member of staff without delay and the Authority informed accordingly.

4.1.7 In the event where operations cease temporarily, the TCP or Permit Holder are obliged to notify the Authority within two (2) days and are also to inform the Authority with regards to when the works are intended to resume.

4.1.8 All the staff on site shall be fully knowledgeable on the handling and usage of fire extinguishers on site.

4.1.9 All staff shall be fully conversant with those aspects of the Permit conditions, which are relevant to their duties.

4.1.10 All the staff on site shall be fully aware of the procedures to be taken in the event of an accidental spill of any liquid other than water and how to contain the environmental hazard.

4.1.11 The Permit Holder shall conduct any monitoring programme/s as may be required by the Authority after consultation with other entities as required, to ensure that the quality of groundwater in the area is not compromised in the event of an environment hazard.

4.1.12 In the event of a spill, the Authority may commission an independent expert at the Permit Holder's expense or ask the Permit Holder to commission an independent expert to undertake any study deemed necessary after consulting the Malta Resources Authority.

4.2 Control of mud and debris

4.2.1 The Permit Holder is to sweep the road leading to the facility at least at end of operations daily in summer and on windy days during the year, unless otherwise indicated by ERA representatives and through official documentation.

4.2.2 At all times during the year the Permit Holder and/or TCP are to ascertain that the roads leading to the facility are clean and free of mud or large debris. In the event that mud or large debris is observed on the road the Permit Holder and/or TCP is to take remedial action and ascertain that the roads are immediately cleaned by means of a road sweeper or mechanical grip/shovel in cases where heavy mud is deposited on the road.

4.3 Site Records & Archive

4.3.1 A site daily operations log shall be made in a legible manner and kept on site and be made available for inspection by the Authority at any reasonable time. The following information shall be recorded on a daily basis and retained for 5 years:

a. Total amount of waste in tonnes accepted on site;
b. Total amount of waste in tonnes refused entry on site;

c. Total amount in tonnes and specific waste stream transferred from site;
d. Any incidents that took place on site such as mechanical faults in the machinery or equipment used on site, any spills, fires, etc and the remedial action taken;
e. Records related to Section 4.2;
f. Any other incidents that the Permit Holder deems important to record in the Site daily operations log; and
g. Any complaints related to the operations at the site.

Each record shall be compiled within 24 hours of the relevant event. The records kept in the daily operational log and shall be made available for inspection at any time when the Authority representative request to inspect them.

4.3.2 A full record is to be kept of all the vehicles entering the site carrying waste to be recycled/backfilled, their registration plate, date and time of entrance and the tonnage of each vehicle.

4.4 Reporting

4.4.1 All reports and written required by this Permit shall be made and sent to the Authority addressed to the Compliance and Enforcement Directorate, Environment and Resources Authority.

4.4.2 The Permit Holder shall also submit to the Authority an Annual Environmental Report (AER) of the previous year by not later than end of March of each year, providing the information listed in Schedule 2 of this Permit and in the format specified therein. It shall also be ensured that all certification and documentation as per Schedule 2 are submitted according to the relevant timeframes therein.

4.4.3 In the event where operations cease temporarily (2 weeks or more), the TCP or Permit Holder are obliged to notify the Authority within two (2) days and are also to inform the Authority with regards to when the works are intended to resume.

4.4.4 The Authority shall be informed within 24 hours in the event of an environmental hazard or major incidents.

5. Cessation of Activity

5.1 The Permit Holder shall notify the Authority prior to ceasing operations permanently in part or in full, whereby an application for cessation of operations shall be made to the Authority and shall include a decommissioning plan.

5.2 In the event that the activities listed in condition 1.1 of this permit ceases unexpectedly and the Permit Holder is no longer interested in pursuing the permitted activity, the Permit Holder is to notify the Authority within seven (7) days.

5.3 In the absence of a valid development permit covering the final levels, the permitted activity shall at no time exceed the original site levels and be contiguous with surrounding contours.

5.4 When the Authority deems it necessary, prior to the cessation/closure of the site, the Permit Holder shall carry out any monitoring tests as indicated by the Authority, which will determine whether the Permit Holder can be released from the obligation of this permit.

5.5 All obligations of this permit shall subsist until such time that the Authority notifies the Permit Holder in writing that all obligations and conditions of the permit have been fulfilled without prejudice to any liabilities and third-party rights.

5.6 Upon receiving official documentation from the Authority that confirms the site's closure, the Permit Holder is automatically responsible and liable in pursuing his responsibilities and fulfil his post-operational responsibilities, namely to:

i. Should the Authority deem it necessary, monitor the waste mass stability and submit a report.
ii. Assure that the site is properly secured and that it cannot in any possible way be used as an illegal dumpsite or be accessed for fly tipping.

Schedule 1

Complete List of Permitted Waste on Site

01 01 02	Waste from mineral non metalliferous excavation
01 04 08	Waste gravel and crushed rocks except those mentioned in 01 04 07 (wastes containing dangerous substances from physical or chemical processing of non-metalliferous minerals)
01 04 09	Waste sand and clays
01 04 13	Wastes from stone cutting and sawing except those mentioned in 01 04 07
17 01 01	Concrete except that mentioned in 17 01 06 (mixtures of, or separate fractions of concrete, bricks, tiles and ceramics containing dangerous substances.)
17 01 02	Bricks
17 01 03	Tiles and ceramics
17 01 07	Mixtures of concrete, bricks, tiles and ceramics other those mentioned in 17 01 06
17 02 02	Glass
17 03 01*	Bituminous mixtures containing coal tar
17 03 02	Bituminous mixtures other than those mentioned in 17 03 01
17 05 04	Soil and stones (Excluding topsoil, peat; excluding soil and stones from contaminated sites)

Schedule 2

Annual Environment Report and Submissions

Important note
By this submission, you confirm that you give your consent for the entire contents of this Annual Environment Report to be made available on the Authority's public website.

S2.1 Introduction

Environmental Permit Number	
Reporting Year (Calendar Year: 1 January to 31 December)	
Name and locality of Site	
Brief description of activities at the site	

S2.2 Waste Records

S2.2.1 Mineral Waste Records

Mineral waste treatment sites				
Site I.D _____				
			Amount in Tonnes	**Specification**
Section1	Waste Input	Mineral waste from Construction & Demolition (including civil engineering)		
		Excavation waste		
		Asphalt or tarmac waste		
		Soil		
		Sub-Total		
Section 2	Waste Treatment	Backfilling of Construction & Demolition waste (in own quarry site)		
		Backfilling of Excavation waste (in own quarry site)		
		Recycling (e.g. crushing)		
		Other (please specify type)		
		Sub-Total		
Section 3	Material Output (after waste treatment of C&D waste)	Aggregates for concrete		
		Aggregates for roadworks		
		Crushed material as torba		
		Crushed material for backfilling		
		Other (please specify type)		
		Sub-Total		
	Material Output (after waste treatment of Excavation waste)	Aggregates for concrete		
		Aggregates for roadworks		
		Crushed material as torba		
		Crushed material for backfilling		
		Sub-Total		
Section 4	Waste Output (resulting after treatment) - *Ex: Wood, plastic, metals*	Total amount (please specify destination)		

S2.2.2 Waste Records (waste removed from site)

Waste Type		Amount (tonnes / number)		Location of Disposal
Tyres				
Scrap metal				
Others (please specify):				
Hazardous waste type	**EWC Code[1]**	**Consignment note number**	**Destination**	**Quantity (tonnes)**
Off-site transfers of hazardous waste (please specify, eg: Waste Oils, Batteries):				

The Permit Holder or TCP is also obliged to send to the Authority on a report on the following information:

a. Vehicles refused entry
b. Registration plates and Company name of vehicles who brought in unacceptable waste loads

S2.3 Fuel Consumption Data

Equipment [2]	Fuel type	Fuel Consumption	Units
			tonnes
			tonnes
			tonnes
			tonnes

S2.4 Incidents and Complaints

S2.4.1 Non-Compliance Incidents during Reporting Year

Date of incident	Brief description of Incident	Cause	Corrective action

Total number of non-compliance incidents for the previous reporting period:[3]	
Total number of non-compliance incidents for the current reporting period:	

[1] European Waste Codes Catalogue https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02000D0532-20150601&qid=1475495799963&from=EN

[2] E.g. Boiler, generator, vehicles, etc.
[3] "Previous year" data is not required in the first reporting year (2022).

S2.4.2 Complaints made by the public or through Authority

Date of complaint	Description of complaint	Actions taken

Total number of complaints for previous reporting year: [i]	
Total number of complaints for current reporting period:	

S2.5 Submission of certificates

Certification of Weighbridge Calibration every year	☐
Submission of Waste Records every year	☐

Applicant's declaration

I declare that, to the best of my knowledge, all the above information is correct and substantiated.

…….	……..	…….
Name *(in block letters)*	**ID Card Number**	**on behalf of / in my own name** *(in block letters)*
…….		…….
Signature		**Date**

Schedule 3A

Site Map

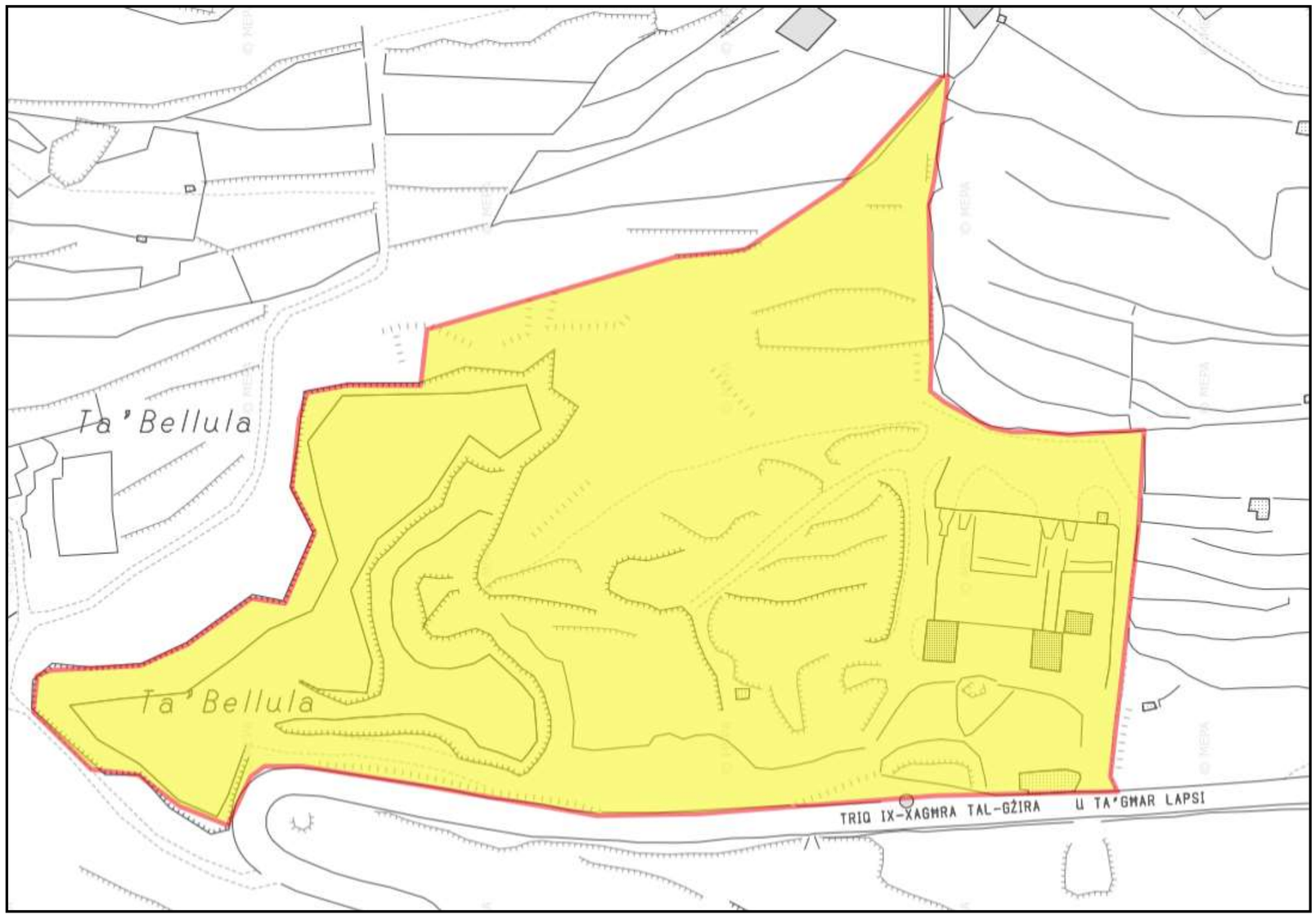

Fig. 3.1: Site of installation outlined in red, showing extent of area authorised for activity for the carrying out of the activities specified in Condition 1.1.1. The extent of the site boundary is indicative and shall not be used for interpretation purposes.

Schedule 3B

Site Layout Plan

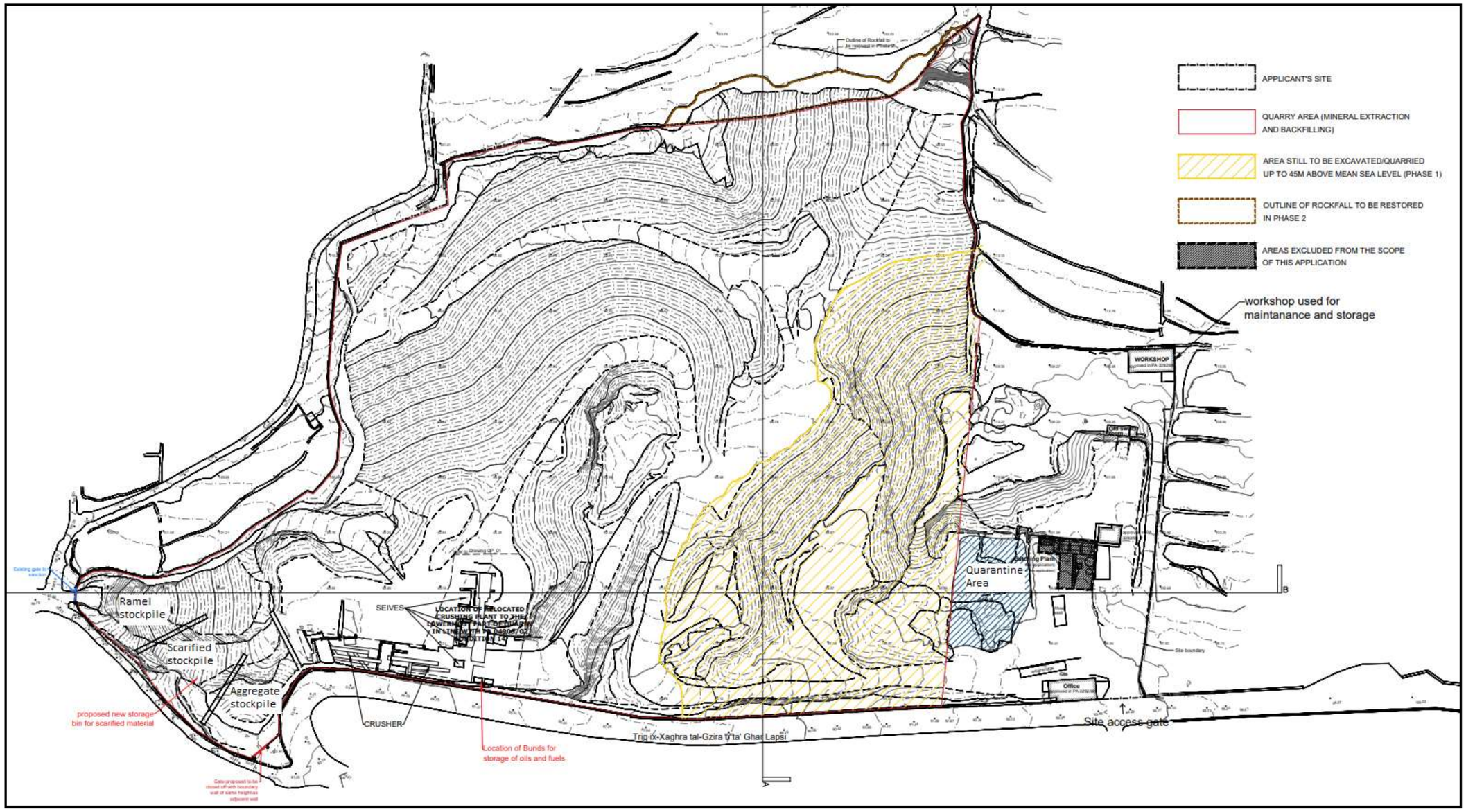

Fig. 3.2: Site of installation, showing extent of area authorised for activity for the carrying out of the activities specified in Condition 1.1.1. The extent of the site boundary is indicative and shall not be used for interpretation purposes.

END OF PERMIT