



Architectural, Archaeological, Historical
& Cultural Heritage and Related
Material Assets Study

As per ERA requirements for PA/O6O96/23

Technical Report



ARCHITECTURAL, ARCHAEOLOGICAL, HISTORICAL &
CULTURAL HERITAGE AND RELATED MATERIAL
ASSETS STUDY

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1 INTRODUCTION

This technical study identifies the Architectural, Archaeological, Historical & Cultural Heritage and related Material Assets, and assesses the impacts caused in relation to the Environmental Impact Assessment (EIA) for the proposed Thermal Treatment Facility (TTF). The facility is being proposed for the incineration of hazardous waste, and is hereafter referred to as ‘the Scheme’. The proposed development will form part of the ECOHIVE Complex and will operate in conjunction with the other waste management facilities at Magħtab.

1.1 PROJECT DESCRIPTION

The site of the proposed TTF project is located at the eastern sections of the ECOHIVE Complex, Tul il-Kosta / Triq ir-Ramla, Triq ta' Saverja, Naxxar (Figure 1), adjacent to the proposed Material Recovery Facility (MRF), assessed through a separate EIA. The entire site footprint of the TTF is approximately 18,185 sqm.

The proposed scheme aims to establish a new hazardous waste incineration plant within the existing ECOHIVE complex. The project entails the creation of a new plant with two independent lines, with potential for a third line in the future.

The proposed development includes rotary kiln technology to ensure high-temperature combustion for complete waste incineration. The project includes Flue Gas Treatment systems and independent incinerator and boiler setups for each line, enhancing operational reliability and waste treatment capacity.

1.2 SCOPE OF DOCUMENT

The specific aim of this assessment is to summarise the known and potential archaeological conditions within the Scheme area to subsequently inform the EIA process.

The objectives of the assessment are to produce details of relevant legislations, national and local planning policy, and best practice guidance and assess the significance of the known and potential archaeological resources through weighted consideration of their valued components.

2 TERMS OF REFERENCE

The ERA issued the Terms of Reference related to the study on architecture, archaeological, historical & cultural heritage and related material assets for the EIA in June 2024. They are replicated hereunder.

APPENDIX 3: TERMS OF REFERENCE FOR A CULTURAL HERITAGE ASSESSMENT (AS PROVIDED BY THE SUPERINTENDENCE OF CULTURAL HERITAGE, AS REVISED IN OCTOBER 2013)

1.0 Preamble

The proposed project would involve development over an extensive area and may lead to intensification of activity over a larger area. Potential impacts may occur within the footprint of the project, in the immediate environs, and along access routes to the site. Potential impacts may include direct and immediate material impacts, as well as subsequent impacts that might arise from the modification of the existing situation.

2.0 Scope and Definitions of the EIA

For the purposes of this document, cultural heritage is defined by Article 2 of the Cultural Heritage Act (2019). This includes movable or immovable objects of artistic, architectural, historical, archaeological, ethnographic, palaeontological, and geological importance.

2.1 The study area shall include the total footprint of the proposed development.

2.2 In the context of this particular application, cultural heritage considerations may include:

- *Features of archaeological value and potential;*
- *Military or civil architecture from the Knights period to British period;*
- *Vernacular structures; and*
- *Field systems and agricultural features such as irrigation systems.*

The above cultural heritage definitions and considerations are not to be considered as exhaustive. The EIA must consider all other forms of cultural heritage, both known and unknown.

2.3 The Environmental Impact assessment will:

- *Describe the Cultural Heritage assets within the study area;*
- *Analyse the cultural heritage features within the context of the cultural landscape;*
- *Assess the physical, spatial and visual impacts of the proposed development on the cultural heritage assets; and*
- *Propose corrective measures for the protection of the cultural resources.*

3.0 Methodology

In quantifying the cultural heritage assets within the study area, and assessing the impacts of the proposed development, the EIA will undertake:

- *Description and assessment of the property;*
- *Desktop and archival research limited to the study area;*
- *Fieldwork and research, including “field walking”, topographic survey and remote sensing as may be necessary within the site. All fieldwork has to be authorised by the Superintendence of Cultural Heritage as defined below under point 4;*
- *Consultations with any relevant bodies, including the Superintendence of Cultural Heritage, Heritage Malta, the University of Malta, NGOs and Local Councils;*
- *Compilation of an inventory of the cultural heritage assets identified within the study area. The features of cultural heritage are to be described and plotted with grid references, on Data Capture Sheets, the design of which should be approved in advance by the Superintendence of Cultural Heritage. The Data Capture Sheets will be presented as an appendix to the EIS. The analysis of the features will be included in the main report; and*
- *A cultural heritage Risk Assessment Map examining the various impacts of the proposed project is to be included in the EIA.*

4.0 Authorisation by the Superintendence of Cultural Heritage

As per Cultural Heritage Act 2019, any form of investigation or prospection required for the identification of cultural heritage (including excavation, field walking, topographic survey and remote sensing) may only be undertaken by the Superintendence of Cultural Heritage or with its written approval.

3 METHODOLOGY

3.1 AREA OF INFLUENCE

The Area of Influence for the study comprises the immediate footprint of the new facility, together with a 100m buffer zone around the proposed site. The AOI is mapped in Figure 1. This area consists of exposed outcrops of Lower Coralline and Globigerina Limestone rock between cultivated terraced fields lying across gently sloping hills.



FIGURE 1: MAP OF PROPOSED SITE AND AREA OF INFLUENCE

3.2 LITERATURE REVIEW

The methodology employed for the assessment of the cultural heritage in this area first involved a desktop study. This stage included a thorough review of published literature and previous reports carried out in the area. A number of publicly accessible sources of primary and synthesized information were consulted, including:

1. National heritage datasets including the National Inventory for Malta and Scheduling (HS) constraints available on the Planning Authority (PA) Geoportal;
2. Relevant mapping including survey maps and Local Plans;
3. Relevant documentary sources, including Museum Annual Reports (MAR) and grey literature.

A bibliography of documentary, archive, and cartographic sources consulted is included in the References section of this report.

3.3 SITE INSPECTION

The Scheme area was surveyed on the 28th June 2024. The aim of the inspection was to systematically identify and record any cultural/historical features visible in the landscape and identify potential for unknown cultural heritage assets.

A photographic record using OM SYSTEM TG-7 camera with 4x wide optical 4.5-18mm zoom lens and a DJI Mini 2 Drone was made for each area visited and any identified cultural heritage assets.

3.4 EVALUATION

Archaeological artefacts or deposits recorded were identified as far as possible and their conservation importance given with reference to appropriate legislation, standards and guidance. These included the Structure Plan for the Maltese Islands, the SPED, the Cultural Heritage Act, 2002, as well as international conventions / treaties / standards applicable in Malta.

The results of the survey have been mapped in a GIS and catalogued following standard systems. Details, including descriptions of the cultural heritage features in the area, are available in Appendix I.

Copies of all documents and photographs related to this survey, as well as the final report, will also be deposited at the Superintendence of Cultural Heritage.

4 LEGISLATION AND STATUTORY PROTECTION

The following section provides a summary of the national, regional and local planning, and legislative framework governing the protection and treatment of cultural heritage within the planning process.

The archaeological curator responsible for archaeological resources up to the 12 nautical mile limit, is the Superintendence of Cultural Heritage. This unit is responsible for managing and ensuring that the protection and accessibility of cultural heritage as defined in the Cultural Heritage Act 2001, is carried out.

4.1 DEVELOPMENT PLANNING ACT 2016

This Act aims at implementing a comprehensive planning system by means of a Spatial Strategy which regulates “the sustainable management of land and sea resources covering the whole territory of the Maltese Islands” (44.1). As per Directive 2014/52/EU (which supersedes Directive 2011/92/EU), Environment Impact Assessments are required to provide high level protection to the environment and human health and ensure that projects which are likely to have significant effects on the environment are adequately assessed before any development consent is granted.

Relevant to this assessment is the Subsidiary Legislation 552.01 of the Development Planning Act 2016 dealing with Rubble Walls and Rural Structures (Conservation and Maintenance). Rubble walls and non-habitable rural structures are protected, “*in view of their historical and architectural importance, their exceptional beauty, their affording a habitat for flora and fauna, and their vital importance in the conservation of the soil and of water*” (2).

4.2 STRUCTURE PLAN FOR THE MALTESE ISLANDS 1990

The Structure Plan for the Maltese Islands was drafted in 1992, with the aim to control development and channel it into existing and committed urban areas and improve the quality of all aspects of the environment of both urban and rural areas. Heritage falls under Chapter 13. Tourism and Recreation. However, it is largely dealt with in Chapter 15. Conservation. This section clearly sets out criteria to determine areas/assets of cultural significance, including Urban Conservation Areas; Listed Buildings; Rural Conservation Areas; Areas and Sites of Archaeological Importance; and Marine Conservation Areas.

4.3 CULTURAL HERITAGE ACT 2002

The management and protection of cultural heritage is legally covered by the Cultural Heritage Act 2002.

Cultural heritage is defined as “*movable or immovable objects of artistic, architectural, historical, archaeological, ethnographic, palaeontological and geological importance and includes information or data relative to cultural heritage pertaining to Malta or to any other country. This includes archaeological, palaeontological or geological sites*

and deposits, landscapes, groups of buildings, as well as scientific collections, collections of art objects, manuscripts, books, published material, archives, audio-visual material and reproductions of any of the preceding, or collections of historical value, as well as intangible cultural assets comprising arts, traditions, customs and skills employed in the performing arts, in applied arts and in crafts and other intangible assets which have a historical, artistic or ethnographic value’ (Part 1.2)

Cultural Heritage Act 2002 states that the Superintendence of Cultural Heritage (SCH) functions as the regulating body endowed with fulfilling the duties of the State in the protection of the cultural heritage. To this end, the SCH ensures the protection of cultural heritage by authorizing and regulating excavations and their surveillance (in the form of archaeological monitoring) to ensure that the best scientific methods are adopted for adequate documentation. It is within the role of the SCH:

‘to ensure that adequate documentation is kept and archived in relation to excavation, exploration and search for antiquities, the conservation of cultural property and discoveries resulting from environment impact assessments,’

SCH has the power: *‘to advise and coordinate with the Planning Authority action in safeguarding cultural heritage when considering applications for planning permission relating to development affecting objects, sites, buildings or landscapes which form part of the cultural heritage,’*

Any person who, even accidentally, discovers any object, site or building, to which this Act applies, must immediately inform the Superintendent and keep the object found in situ. Every movable object forming part of the cultural heritage discovered in any location within the Maltese Islands, whether found in authorized or illegal excavations or explorations or by accident in the course of any works or any other manner shall belong to the State. The person responsible for the excavation or exploration must give the Superintendence of Cultural Heritage all original records gathered in the progress of the excavation or exploration.

The Cultural Heritage Act states that the proper use and protection of national cultural property shall be in conformity with the provisions of international conventions ratified by the Government of Malta:

‘The powers and duties under this Act shall be exercised in conformity with any international convention, treaty, agreement or instrument concerning the proper use and conservation of national or world cultural property to which Malta may be a party.’

Any persons who act against the protection of cultural heritage will suffer legal consequences, as stipulated in the Cultural Heritage Act.

4.4 LOCAL POLICY

The Magtab area, within the Naxxar Council boundaries, is under The Central Malta Local Plan (CMLP 12.1.3), classified as Rural/ODZ Area with an existing Landfill site

and an Engineered Sanitary Landfill site towards the main transport Network route (arterial) CG38, (Map SE1 and NAM3 on PA Local Plan Details).

Next to the Area of Interest, the policy map CV1 (Figure 2), identifies listed Areas of Scientific and Ecological Importance (CG22), a protected Natural Coast with public access and a Scheduled Area/Sites (Ta Hammud dolmen) towards North-West, while policy map CV2 (Figure 3) and CV3 (Figure 4) show respectively the area of High Landscape Sensitivity and Archaeological features. The archaeological feature policy maps were consulted so as to assess the listed and known features in the area in question known as the Areas of Archaeological Importance (AAI).

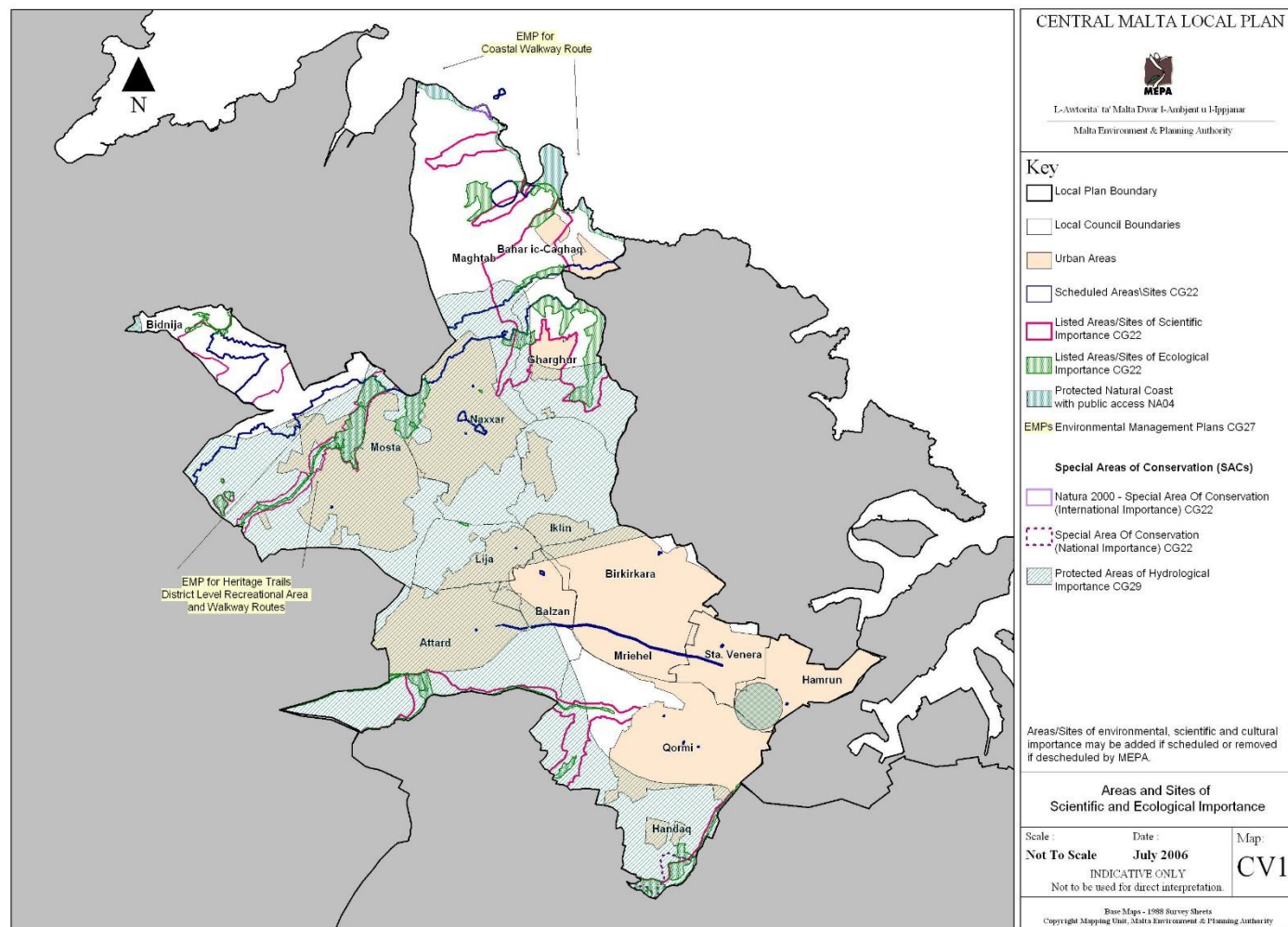


FIGURE 2: POLICY MAP CV1 (SOURCE: CENTRAL MALTA LOCAL PLAN)

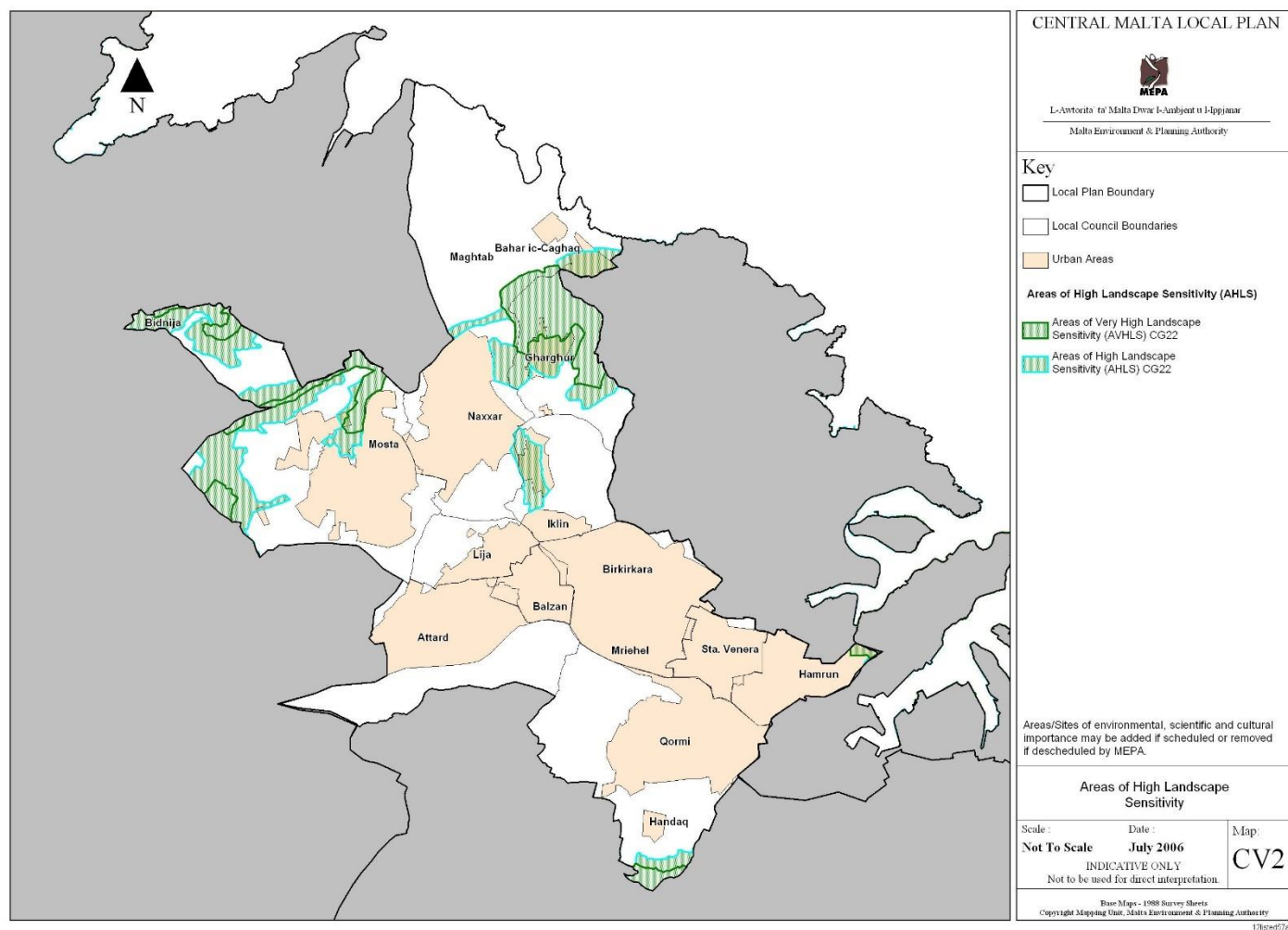


FIGURE 3: POLICY MAP CV2 (SOURCE: CENTRAL MALTA LOCAL PLAN)

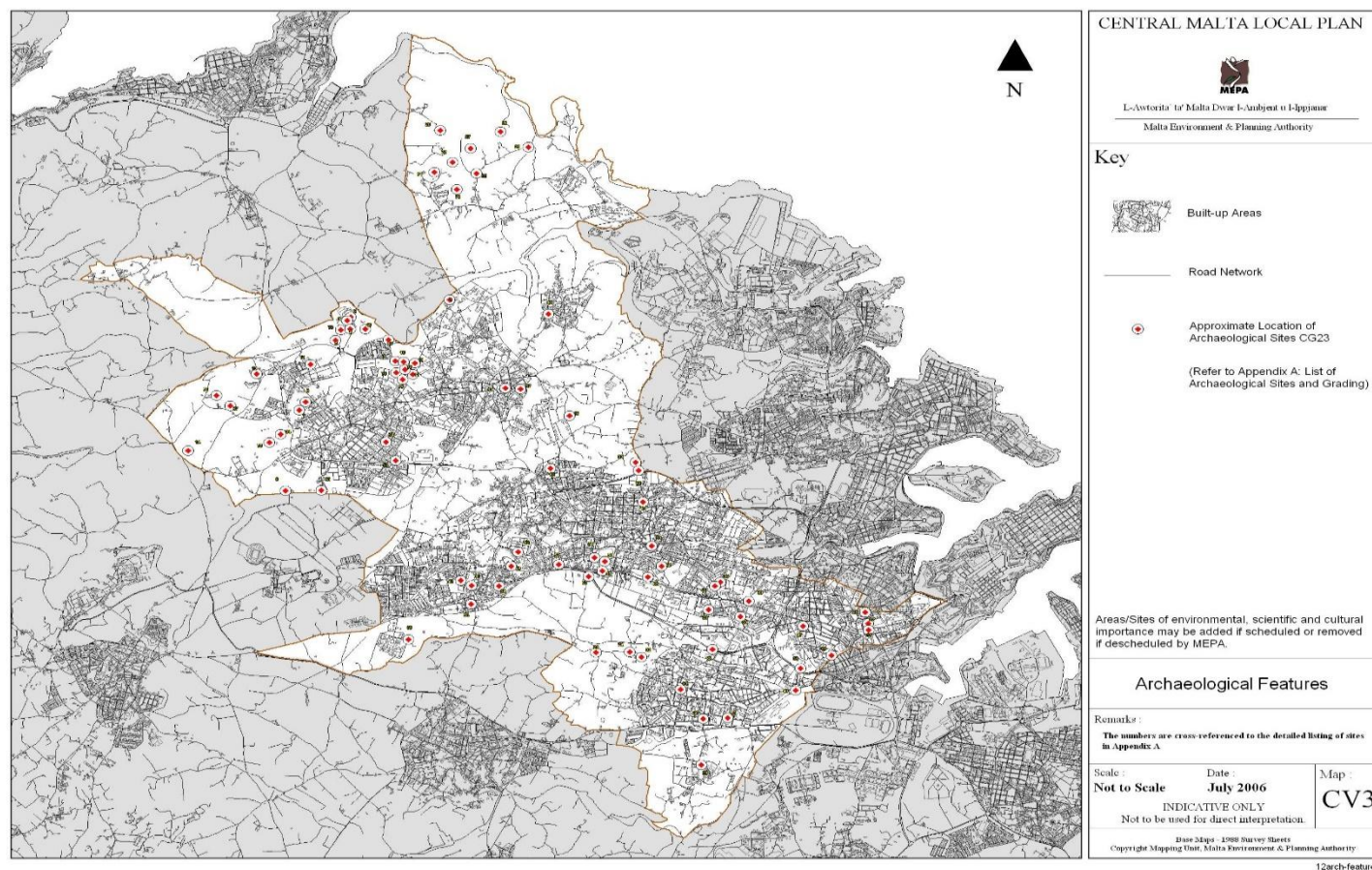


FIGURE 4: POLICY MAP CV3 (SOURCE: CENTRAL MALTA LOCAL PLAN)

5 BASELINE SURVEY

5.1 DESKTOP STUDY

The following section of the report summaries the history of the Magħtab, Naxxar area. The main reported archaeological finds were examined with numerous sources of information consulted, such as:

- Documentary;
- Cartographic;
- Reports of any previously discovered archaeological material; and
- Existing literature related to the cultural heritage and history of the study area.

Data used to compile this report consists of secondary information derived from a variety of sources, only some of which have been directly examined for the purposes of this Study. The assumption is made that this data, as well as that derived from other secondary sources, is reasonably accurate.

The records held by the SCH on the geoportal are not a record of all surviving heritage assets, but a record of the discovery of a wide range of archaeological and historical components of the historic environment. The information held within it is not complete and does not preclude the subsequent discovery of further elements of the historic environment that are, at present, unknown.

5.1.1 Prehistory

Due to the passage of time and the intensification of land uses in the area, it can be particularly difficult to reconstruct the coastal landscape in prehistoric times. Gambin (2005) demonstrates that the prehistoric landscape of Malta may well have been drastically different than that of today and the environment has experienced numerous and significant changes over the millennia (Mariner et al, 2012). In fact, archaeological indicators in Malta, including cart ruts and Garum production sites, indicate that modern sea levels are higher than those of prehistoric periods (Furlani et al, 2013). Sea level change has also factored significantly into the alteration of the prehistoric landscape of the Malta-Sicily Channel. During the Last Glacial Maximum (LGM), Malta was connected to Italy via a land-bridge, however following sea level rise, Malta was subsequently cut off from the European mainland around 14500 years BP (Alexander, 1988; Furlani, et al, 2013). Prehistoric shipwreck assemblages of obsidian off of the coast of Pantelleria demonstrate the effect sea level change has had within the larger Sicily Channel (Abelli, et al., 2014). This is further demonstrated by the discovery of a submerged monolith within the Sicily Channel dated to the Mesolithic Period (Lodolo & Ben-Avraham, 2015).

Close to the Magħtab area specifically, other than sea level change, riverine sedimentation has had a significant impact on the coastline since Prehistory, as the Modern Burmarrad plain formed over time replacing a once much larger Salina Bay

(Marriner et al., 2012). This larger inlet once more sheltered and is thought to have been an important port in ancient times (Marriner et al., 2012).

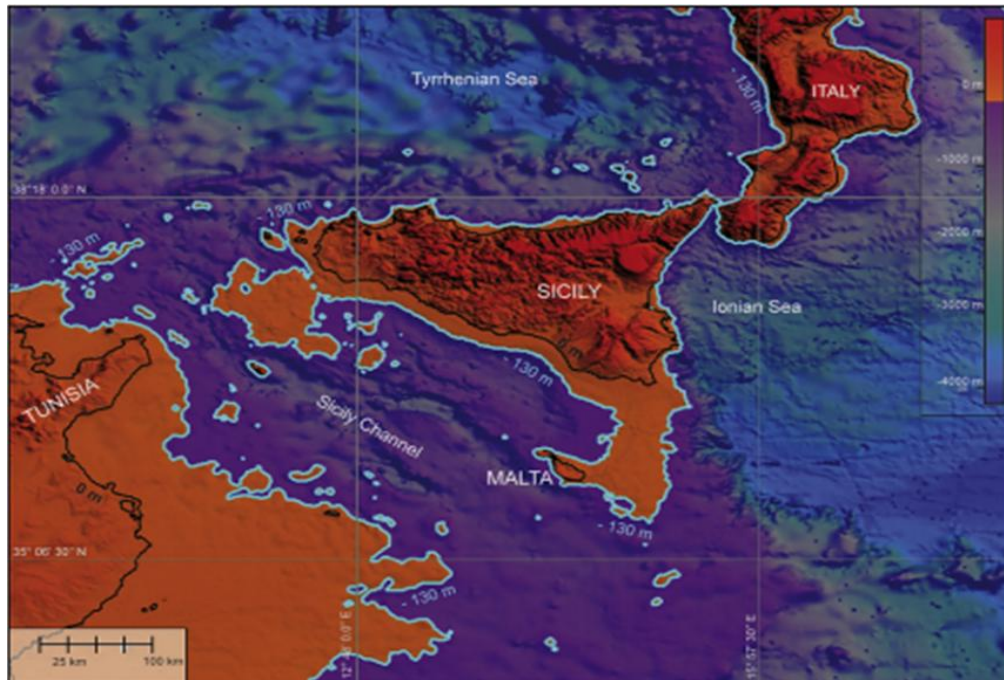


FIGURE 5: LAND BRIDGE BETWEEN SICILY AND MALTA (SOURCE: FURLANI, ET AL, 2013)

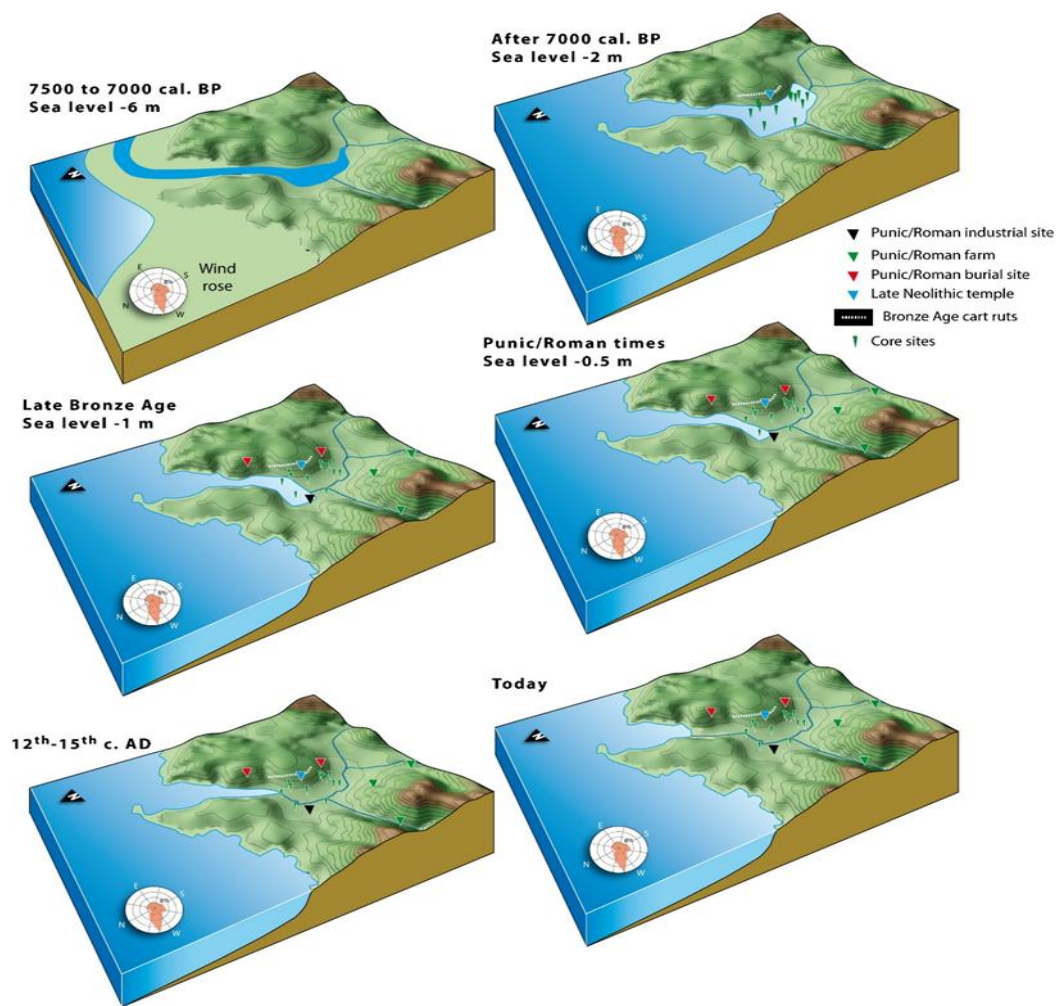


FIGURE 6: PROGRADATION OF THE BURMARRAD RIA, SHOWING THE PROGRESSIVE DECLINE OF THE BAY. (SOURCE: MARRINER ET AL. 2012)

The most conspicuous element of Prehistoric activity in the Magħtab area are the several remaining dolmens (Bronze Age megalithic burials), which date to the period (mar 1927-28; Trump 2004). These preserve very scant traces of dateable cultural remains, and hence are difficult to date and interpret comprehensively. The area between the Magħtab area and Salina also contain the characteristic cart ruts, which possibly also date to the Prehistoric period, however this has never been confirmed (Trump 2008). The function of these ruts is still disputed, however the generally accepted interpretation views them as remnants of ancient trackways. The ruts which have been discovered in this area have also tentatively been traced to progress towards and over the great fault, disappearing beneath residential areas in San Pawl tat-Tarġa (Trump 2008). Also in the Salina Bay area is the Tal-Qadi megalithic temple, which despite being smaller than its more well-known contemporaries (e.g. Haġar Qim and Ġgantija), nevertheless demonstrates that this area was also an important centre of activity during the Temple Period. This site was also the location for the discovery of several important cultural artefacts, including an ancient carved representation of the night sky (Trump 2004; Sagona 2015).

5.1.2 Antiquity

The aforementioned Salina Bay is thought to have been an important port in Antiquity, having been much larger even in Classical times, and thus very sheltered (Marriner et al. 2012). Surviving historical documents demonstrate the use of Malta's natural harbours in antiquity, when during the mid-first century BC, Diodorus Siculus described their use. Linking the use of the harbours and the Phoenicians, he states that Malta "possesses many harbours which offer exceptional advantages" (Gambin, 2015, p.7). He continues to draw a comparison between the prosperity of the islands' inhabitants and the fact that Malta is "well supplied with harbours".

The Ancient utilisation of Salina Bay as a harbour is attested by the several ancient shipwrecks and anchors discovered in the Bay, as well as the prevalence of ancient pottery scatters which have been found on the seabed

The Magħtab area also contains notable traces of activity from Antiquity, namely made up of surface stone quarries and many rock-cut chamber tombs and catacombs. These are in many cases related, with rock-cut tombs being excavated in the sides of quarries, which present ready surfaces for rock-cutting (Bonanno 2005). The quarries are difficult to date directly, and many of the tombs in this area were looted before their discovery in modern times. Nevertheless, the Salina catacombs are known to date to the Late Roman and Byzantine periods (between the third and 6th centuries AD) (Bonanno 2005). The quarries which these catacombs were cut into, hence date to an earlier time.

5.1.3 Middle Ages

Traces of activity from the Medieval period are rather scarce for the Magħtab area. The closest evidence comes from the San Brincat (Għargħur) troglodytic settlement, situated in a valley set within the Great Fault (Dalli 2006). This site is located in close proximity to a natural freshwater spring, and is thought to have possibly been a centre of Medieval Siculo-Greek monasticism (Dalli 2006).

5.1.4 Early Modern

During the Late Medieval and Early Modern periods, numerous attacks were made on Malta by North African corsairs, rendering the coastline largely bereft of settlements (Freller 2010). As a result, the low-lying coastline around Il-Magħtab and the sheltered bay of Salina, saw a drastic increase in the investment in coastal defences, particularly by the Knights of St. John (Freller 2010). Many of these survive, including the Għallis Tower, at the tip of the promontory, opposite Qawra, the Għallis Battery, the Qalet Marku Battery, as well as the Ximenes Redoubt and the associated rock-hewn mortar (fougasse).

Apart from its increased military significance, the Salina area played an increasing importance in the local economy as the salt panning industry was expanded under the Knights of St. John. This included significant investment in the salt panning facilities by the Knights, which are in use till this day (Marriner et al. 2012).

5.1.5 Modern

Following the takeover of the Maltese Islands by the French and subsequently the British, the area retained its defensive importance. As a matter of fact, during the Second World War, several new defences were built in the area (including numerous beach posts), and others, including the Ghallis Battery were reinforced and augmented with modern anti-aircraft weaponry. A bomb shelter was also excavated in the Salina hamlet.

5.2 SITE INSPECTION AND DISCOVERIES

This section summarises any archaeological remains discovered during the course of the desk-based assessment within the Area of Influence.

Figure 7 shows the location of the listed archaeological sites within the AoI.

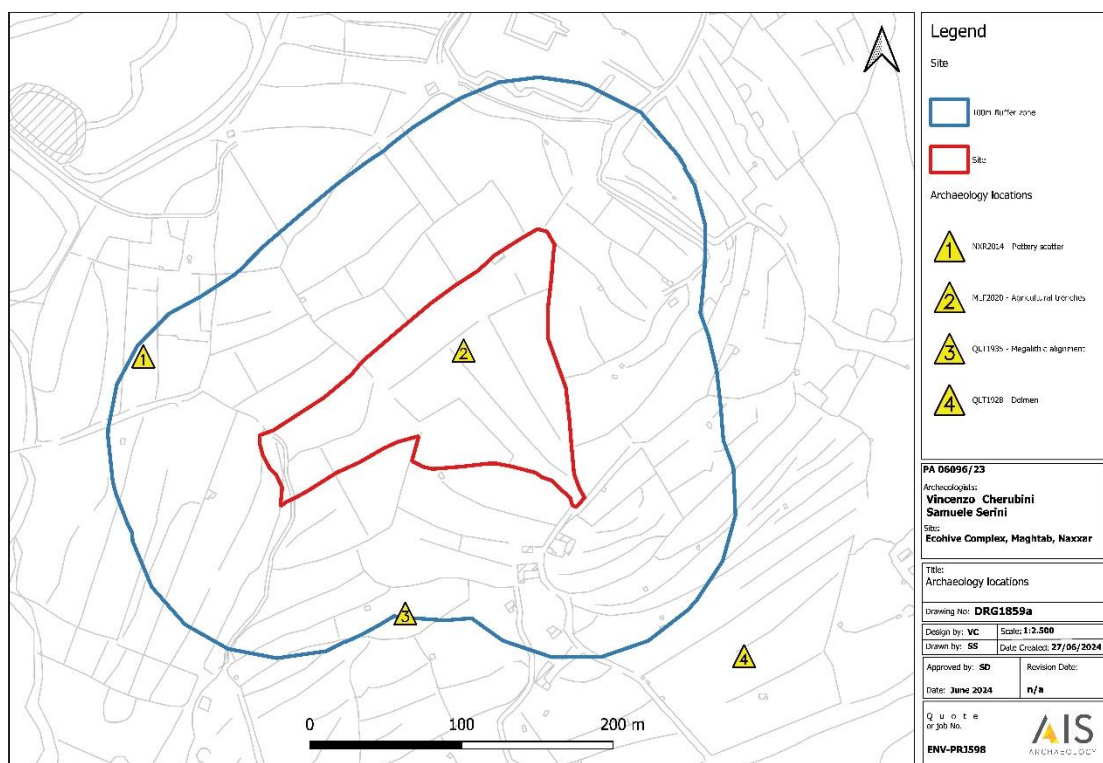


FIGURE 7: LOCATION OF LISTED ARCHAEOLOGICAL SITES WITHIN AOI

5.2.1 Scheduled Sites

The 100m buffer zone around the AoI encompasses three scheduled cultural heritage features.

- Located N-West and S-East to the Wasteserv main Entrance, a pottery scatter was discovered during archaeological monitoring work which has not yet been published (SCH site code: NXR2014);
- a Megalithic alignment (SCH site code: QLT1935), scheduled as Class B Taz Zebbugija megalithic remains, recorded by MARs (MAR 1927-8:3-4; MAR 1935-6:18); and

- 1,100 rock-cut features (numerous alignments of agricultural trenches, post-holes...) located within the site possibly subjected to development and surrounding area, discovered during archaeological evaluation (SCH site code: MLF2020) not yet published but included in the SCH Annual Report (SCH Annual Report 2021:23¹).

It is also worth mentioning another important Prehistoric site known in the vicinity, the Class A scheduled Ta'Hammud megalithic dolmens, which are located approximately 140m from the S-East limit of the site, approximately 40m towards SE from the limits of the AoI buffer zone, down a minor road (Triq ir-Ramla) leading from the coastal road at Qalet Marku.

TABLE 1: LIST OF SCHEDULED SITES WITHIN AOI BUFFER ZONE

PROPERTY ADDRESS	CATEGORY	SCH SITE CODE AND FEATURE TYPE	DEGREE OF PROTECTION	REFERENCE TO FIGURE 7
Tul il-Kosta Naxxar	Archaeology	NXR2014 - Pottery scatter	N/A	1
Tul il-Kosta Naxxar	Archaeology	MLF2020 - Agricultural trenches	N/A	2
Taz Zebbugija, Naxxar	Archaeology	QLT1935 - Megalithic ruins	B	3

According to the SCH Annual Report (2021:23) the aforementioned archaeological evaluation of the TTF site was carried out by the Superintendence of Cultural Heritage in two phases:

1. Fieldwalking exercise and excavation of 19 trial trenches. The results of this first phase indicated the presence of an ancient agricultural landscape mainly characterized by agricultural trenches. Some Classical Period pottery was also recovered, mostly mixed with more modern fill/material.
2. Open area excavation with full soil stripping of the site resulted in the discovery of a total of 1,100 rock-cut features consisting of numerous alignments of agricultural trenches, post-holes, quarrying activity and tree pits, as shown in Figure 8 and Figure 9.

¹ <https://schmalta.mt/wp-content/uploads/2022/09/Annual-Report-2021.pdf>



FIGURE 8: AERIAL PHOTO WITH AREAS SUBJECTED TO ARCHAEOLOGICAL EVALUATION. AREA OF INTEREST IN BLUE (SOURCE: COURTESY OF SCH)

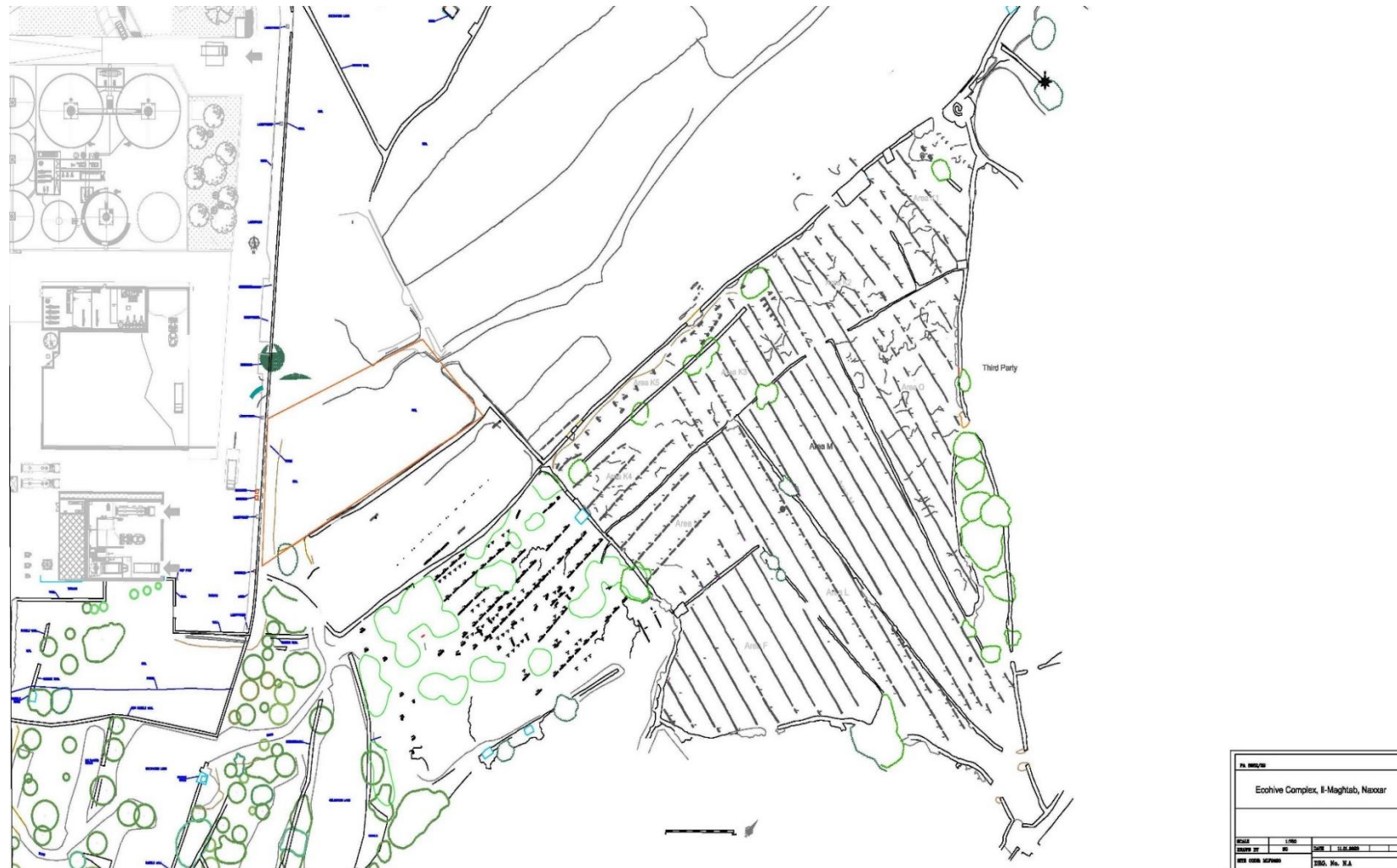


FIGURE 9: ARCHAEOLOGICAL DRAWING OF AoI WITH FEATURES DISCOVERED (SOURCE: COURTESY OF SCH)

5.2.2 Surveillance Exercise Results

The Area of Influence was comprehensively surveyed as indicated within the methodology. A detailed description of all the identified cultural heritage features is given in Appendix 1.

The area proposed for development is found within a rural landscape East and S-East of the Maghtab landfill, containing a number of agricultural fields no longer in use with typical rural structures and rubble walls. The AoI is delimited on its North by a modern landfill and on its West by the WasteServ treatment facilities. This is separated by a fence and rubble walls (Figure 10 and Figure 55). Its East and South side are composed by agricultural fields which include rural vernacular features typical of a Maltese landscape and all related to agricultural activity. The site appears totally stripped of the original soil, due to recent excavations (Figure 11 Figure 59), and includes:

- boundary drystone/rubble walls from fair (Figure 10, Figure 17 Figure 24 Figure 60) to poor/very poor state on conservation (Figure 26 Figure 33 Figure 34 Figure 36 Figure 43 Figure 46 Figure 47 Figure 55 Figure 60);
- modern structures (hunting observation posts - Figure 32 Figure 48),
- a dilapidated farmhouse (Figure 51 Figure 52) and
- a stone hut still in good state of conservation buttressed to a E-W oriented rubble wall in the southern limit of the site (Figure 37).

Archaeological rock-cut features exposed are still visible on the rock surface. These include:

1. Various agricultural trenches: isolated sub-rectangular features (Figure 11 Figure 13 Figure 16 Figure 22); approx. N-S oriented trench alignments (Figure 30 Figure 40, Figure 42 Figure 44 Figure 53 Figure 59) and approx. W-S oriented trench alignments (Figure 24, Figure 32 Figure 56). Different orientations indicate multiple periods of use of land for agricultural purposes (as shown in Figure 54), datable from Classical period to modern period. Some of these trenches are not oriented with the rubble boundary walls, which are built on top of them, as shown in Figure 27 Figure 33 Figure 38 Figure 42 Figure 47;
2. Various Post hole alignments, probably related to aforementioned agricultural trenches since they seem to follow the same orientations (Figure 25 Figure 49);
3. Possible cart-ruts E-W oriented with concave sides and gradual break of slope to a flat base. Located in the central/S-West area (Figure 31).



FIGURE 10: WESTERN ACCESS TO SITE, RUBBLE BOUNDARY WALL BETWEEN SITE AND WASTESEV TREATMENT FACILITIES, LOOKING NORTH



FIGURE 11: WESTERN ACCESS TO SITE. AREA STRIPPED OF SOIL WITH TWO AGRICULTURAL TRENCHES EXPOSED. LOOKING EAST



FIGURE 12: WESTERN AREA STRIPPED OF SOIL, LOOKING SOUTH



FIGURE 13: WESTERN AREA STRIPPED OF SOIL WITH EXPOSED AGRICULTURAL TRENCH IN THE FOREGROUND,
LOOKING SOUTH



FIGURE 14: WESTERN AREA STRIPPED OF SOIL, LOOKING S-WEST



FIGURE 15: WESTERN AREA STRIPPED OF SOIL, LOOKING SOUTH



FIGURE 16: WESTERN AREA STRIPPED OF SOIL WITH EXPOSED AGRICULTURAL TRENCH IN THE FOREGROUND, LOOKING SOUTH



FIGURE 17: MODERN RUBBLE BOUNDARY WALL ON THE WESTERN LIMITS OF SITE, LOOKING WEST



FIGURE 18: SOUTHERN AREA STRIPPED OF SOIL, LOOKING EAST



FIGURE 19: SOUTHERN AREA STRIPPED OF SOIL, LOOKING N-EAST



FIGURE 20: NORTH FACING SECTION OF ORIGINAL SOIL WITH NO INCLUSIONS, LOOKING SOUTH



FIGURE 21: CENTRAL-SOUTH AREA, NE-SW ORIENTED AGRICULTURAL TRENCH, LOOKING N-EAST



FIGURE 22: CENTRAL-SOUTH AREA STRIPPED OF SOIL WITH EXPOSED AGRICULTURAL TRENCHES, LOOKING EAST



FIGURE 23: CENTRAL-NORTH AREA STRIPPED OF SOIL DELIMITED BY RUBBLE BOUNDARY WALL (WASTESERV FACILITY IN THE BACKGROUND), LOOKING NORTH



FIGURE 24: RUBBLE BOUNDARY WALL IN THE CENTRAL AREA, LOOKING N-EAST



FIGURE 25: EXPOSED AGRICULTURAL TRENCHES AND POST HOLES ALIGNMENT IN THE CENTRAL AREA OF SITE,
LOOKING EAST



FIGURE 26: EXPOSED AGRICULTURAL TRENCH AND CONTINUATION OF CENTRAL RUBBLE BOUNDARY WALL, LOOKING NORTH



FIGURE 27: CENTRAL-EAST AREA, EXPOSED NE-SW ORIENTED AGRICULTURAL TRENCHES AND MODERN STRUCTURE, LOOKING EAST



FIGURE 28: CENTRAL-EAST AREA, MODERN STRUCTURE, LOOKING EAST



FIGURE 29: CENTRAL-EAST AREA STRIPPED OF SOIL WITH EXPOSED AGRICULTURAL TRENCHES AND HAUNTING POSTS
IN THE BACKGROUND, LOOKING WEST



FIGURE 30: CENTRAL-EAST AREA, POSSIBLE CART-RUTS AND AGRICULTURAL TRENCHES, LOOKING WEST



FIGURE 31: POSSIBLE CART RUTS, LOOKING WEST



FIGURE 32: EXPOSED W-E ORIENTED AGRICULTURAL TRENCHES AND HAUNTING POSTS, LOOKING WEST



FIGURE 33: EXPOSED AGRICULTURAL TRENCHES AND RUBBLE BOUNDARY WALLS IN THE SOUTHERN LIMIT OF SITE, LOOKING N-EAST



FIGURE 34: SOUTHERN LIMIT OF SITE, LOOKING SOUTH



FIGURE 35: SOUTHERN PART OF SITE, LOOKING WEST



FIGURE 36: SOUTHERN RUBBLE BOUNDARY WALL WITH STONE HUT (GIRNA), LOOKING S-WEST



FIGURE 37: STONE HUT (GIRNA) ON SOUTHERN SIDE OF RUBBLE BOUNDARY WALL, LOOKING S-WEST



FIGURE 38: OVERALL PHOTO OF SOUTHERN-EAST LIMIT OF SITE, LOOKING S-EAST



FIGURE 39: OVERALL PHOTO OF SOUTH-EAST AREA, LOOKING EAST



FIGURE 40: EXPOSED N-S ORIENTED AGRICULTURAL TRENCH IN THE S-EAST END, LOOKING SOUTH



FIGURE 41: N-WEST FACING SECTION OF SOIL WITH NO CULTURAL INCLUSIONS IN THE S-EAST END, LOOKING SOUTH



FIGURE 42: EXPOSED N-S ORIENTED AGRICULTURAL TRENCH IN THE CENTRAL-EAST AREA, LOOKING NORTH



FIGURE 43: RUBBLE BOUNDARY WALL IN POOR CONDITION IN THE EASTERN AREA OF SITE, LOOKING N-EAST



FIGURE 44: EXPOSED N-S ORIENTED AGRICULTURAL TRENCHES IN THE EASTERN AREA, LOOKING N-EAST



FIGURE 45: RUBBLE BOUNDARY WALLS IN POOR CONDITION IN THE SOUTHERN ACCESS TO SITE, LOOKING SOUTH



FIGURE 46: RUBBLE BOUNDARY WALLS IN POOR CONDITION IN THE EASTERN PART OF SITE, LOOKING SOUTH



FIGURE 47: RUBBLE BOUNDARY WALLS AND EXPOSED N-S ORIENTED AGRICULTURAL TRENCHES IN THE EASTERN PART OF SITE, LOOKING EAST



FIGURE 48: MODERN HAUNTING POST IN THE EASTERN PART OF SITE, LOOKING EAST



FIGURE 49: POST HOLE ALIGNMENT IN THE EASTERN PART OF SITE, LOOKING NORTH



FIGURE 50: OVERALL PHOTO OF N-EAST END OF SITE, LOOKING WEST



FIGURE 51: DILAPIDATED FARMHOUSE IN THE NORTHERN PART OF SITE, LOOKING NORTH



FIGURE 52: DILAPIDATED FARMHOUSE, LOOKING EAST



FIGURE 53: EXPOSED N-S ORIENTED AGRICULTURAL TRENCHES IN THE NORTHERN PART OF SITE, LOOKING SOUTH



FIGURE 54: E-W ORIENTED AGRICULTURAL TRENCHES CUT BY LATER N-S ORIENTED AGRICULTURAL TRENCH,
LOOKING S-WEST



FIGURE 55: NORTHERN RUBBLE BOUNDARY WALL, LOOKING N-WEST



FIGURE 56: E-W ORIENTED AGRICULTURAL TRENCH ALIGNMENTS IN THE NORTHERN AREA, LOOKING WEST



FIGURE 57: NORTHERN RUBBLE BOUNDARY WALL IN POOR CONDITIONS, LOOKING NORTH



FIGURE 58: OVERALL PHOTO OF CENTRAL NORTH PART OF SITE, LOOKING SOUTH



FIGURE 59: EXPOSED N-S ORIENTED AGRICULTURAL TRENCH ALIGNMENT IN THE CENTRAL-NORTH AREA, LOOKING SOUTH



FIGURE 60: RUBBLE BOUNDARY WALL IN THE CENTRAL-NORTH AREA, LOOKING S-EAST

5.2.3 Cultural Material

No pottery or cultural material was noted during the landscape assessment at the location and surrounding areas.

5.2.4 Cultural Features

Figure 61 shows the location of the Cultural Features within the AoI identified during the site assessment in Maghtab, Naxxar, while Table 2 lists these features. As per ERA terms of reference, Data capture sheets for any identified Cultural Heritage/archaeological features are presented in the appendix of this EIA.

TABLE 2: LIST OF CULTURAL FEATURES WITHIN AOI

REFERENCE TO 59	TPOLOGY	FUNCTION	STATE OF CONSERVATION
A	Vernacular – dry stone Hut	Agricultural	Fair/Good
B	Vernacular – Farmhouse	Agricultural	Poor/Very Poor

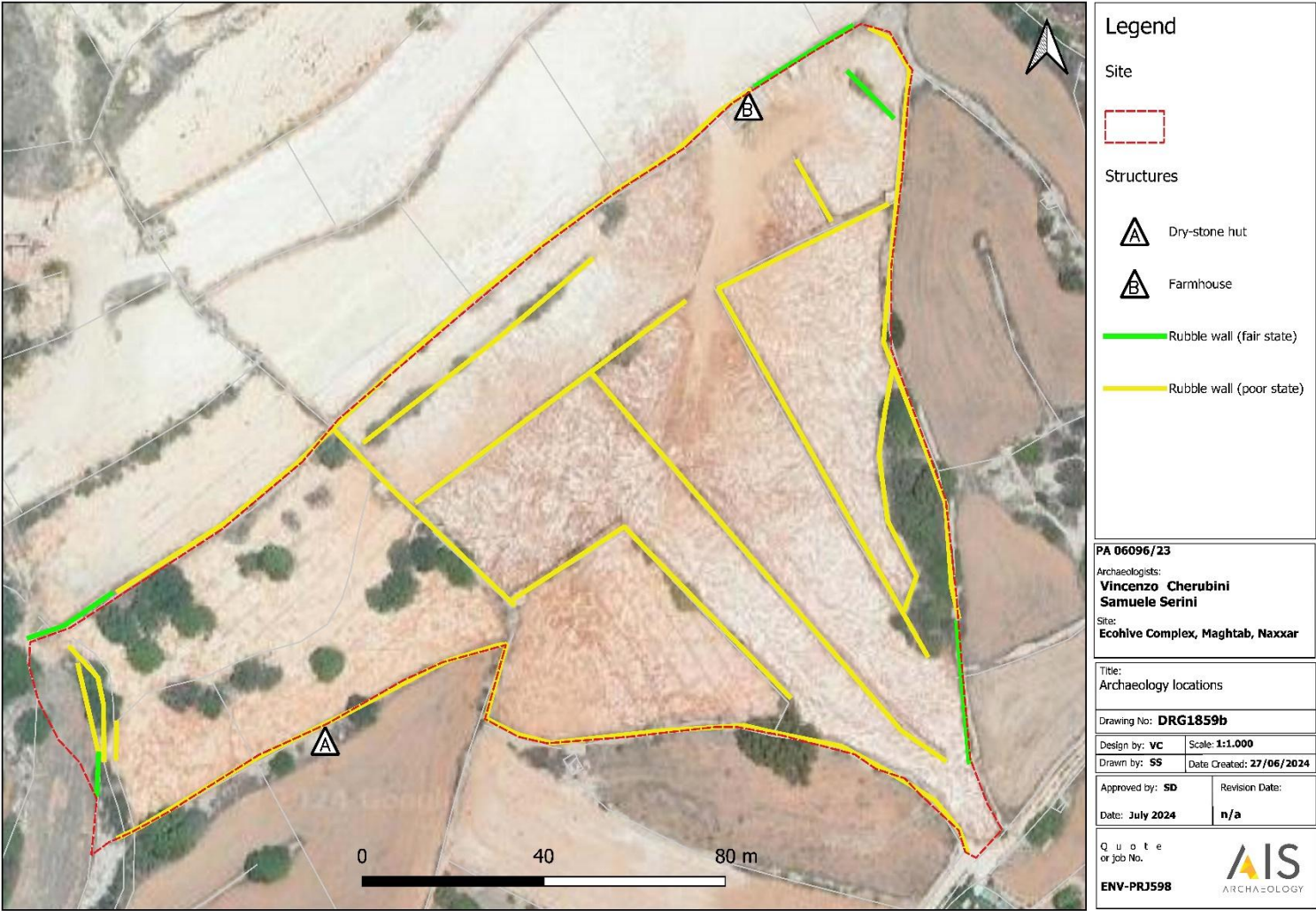


FIGURE 61: LOCATION AND STATES OF CULTURAL FEATURES IDENTIFIED WITHIN AoI

6 IMPACT ASSESSMENT

Following the completion of the desktop research study and cultural heritage assessment, the Impact Assessment was carried out to determine any effects that the project may have on the identified cultural features and the surrounding landscape. This evaluation takes in consideration local and international legislations and other relevant documents related to the protection of cultural heritage. Based on the National Protective Inventory for the Maltese Islands and the Structure Plan Policies on Cultural Heritage, Table 3 summarizes the significance of cultural features.

TABLE 3: CLASSIFICATION OF SIGNIFICANCE OF CULTURAL HERITAGE FEATURE

CULTURAL SIGNIFICANCE	CLASS	GRADE	PROTECTION
Major National Importance	A	1	To be preserved with 100m buffer zone
Local Importance	B	2	To be preserved with 50m buffer zone
Minor	C	3	It may be covered and preserved
Minor	D	-	It may be preserved or destroyed after proper recording
Uncertain	E	-	Further investigation required

6.1 CONSTRUCTION PHASE

In relation to the identified archaeological features exposed through archaeological evaluation (Feature 2 in [FIGURE 7](#)), any stratified deposits above bedrock and related cultural material have already been excavated and documented in accordance with the principle of “preservation by record”. Consequently, no further archaeological investigations are deemed necessary within the AoI.

However, this study draws attention on the potential damage that the construction of the proposed development may cause to any archaeological features below the ground located in proximity of the Southern-East, Southern and Southern-West limits of the scheme. In fact, these areas border with agricultural plots that still contain soil, which may potentially overlay undisturbed cultural remains.

Regarding the identified cultural features within the AoI, namely, rubble walls, the dilapidated farmhouse (Feature B in Figure 61) and the dry-stone hut (Feature A in Figure 61), are very likely to suffer an adverse impact or damage, since the proposed project will result in the destruction of the mentioned assets.

In the past, dry-stone huts were very common throughout the island of Malta providing shelter to farmers and herdsman or their livestock. Nowadays, these features are predominantly found in the northern regions of the island, with many having deteriorated over time due to exposure to the elements or neglect. The hut located within the AoI, however, remains in a well-preserved state and should be regarded as having architectural, cultural, and ethnographic value. Its significance is further reinforced by the “Rubble Walls and Rural Structures Regulations,” last amended in 2007, which afford legal protection to rubble walls and non-habitable rural structures.

According to these regulations, it is not lawful for any person to demolish, endanger, or undermine the stability or integrity of rubble walls and/or rural structures, obstruct rainwater percolation through rubble walls, or compromise their foundations. The Planning Authority is designated as the competent body responsible for the administration and enforcement of these regulations (S.L. 552.01 art. 6).

Regarding the known structures classified as heritage features, ‘Taz-Zebbugija’ Megaliths (Feature 3 in Figure 7), located at the Southern limit of the AoI, approximately 100m away from the proposed development, are the only structure within the AoI, whilst the Class A scheduled Ta’ Hammud megalithic dolmens is located outside the limits of the AoI buffer zone (Feature 4 in fig.7). In consideration of this distance, there will be no direct impact, in terms of physical and/or structural damage/alteration possibly caused by construction activities. Nevertheless, the surrounding areas maintain a designation as a potential archaeological zone due to their cultural importance. In fact, the presence of megalithic remains in the vicinity of the proposed scheme is evidence that this area was inhabited since prehistoric times.

This study highlights that the landscape has undergone some form of change, albeit largely agricultural as far as the evidence goes. This transformation has included the development of terraced fields, rubble walls, farmhouses, and dry-stone huts. Furthermore, previous research suggests that some megalithic stones from the Taz-Zebbugija temples were displaced and shifted to construct other rural structures. Unfortunately, there is a lack of historical documentation and detailed records concerning land use during later historical periods.

Given the importance of the cultural landscape, the potential cumulative impacts on known cultural heritage sites within and adjacent to the AoI must be taken into account.

The area of Magthab is already severely affected by the visual impact of the waste disposal site and other industrial activities. The proposed development and the simultaneous operation of other waste management facilities proposed in the

proximity of the scheme, will cause a further deterioration of the cultural landscape and the context associated with the cultural heritage assets identified in this study. As a result, the cumulative impacts of the TTF are expected to be major adverse.

The residual impacts, rated major to moderate, are mitigated including landscaping around the storage building (83 m²) and around the administration building (32m²), with additional elements at the periphery of the proposed development to minimise visual impacts.

6.2 OPERATIONAL PHASE

The operational phase may give rise to further indirect impacts on the cultural heritage sites nearby the proposed development, particularly on the class A scheduled Ta' Hammud dolmen site.

Of notable concern is the potential increase in air pollution associated with the Thermal Treatment Facility (TTF), including elevated levels of heavy vehicular traffic. These factors must be carefully considered, as the weathering of limestone structures is influenced by the interaction between the stone's properties and its surrounding environment.

Limestone deterioration typically occurs through both chemical and physical processes, including sub-surface weakening that compromises structural integrity over time. Air pollution is widely recognized as a contributing factor in accelerating the weathering of limestone surfaces, potentially leading to long-term alterations in the stone's physicochemical characteristics and overall structures stability.

Therefore, even if the impact assessment rates these concerns as currently minor adverse, measures may be taken to address and minimize these possible issues through mitigation strategies for reducing air pollution; close consultation/communication with cultural heritage regulator, and possible compensation for site's preventive maintenance operations.

7 MITIGATION MEASURES, RESIDUAL IMPACTS AND MONITORING

7.1 MITIGATION MEASURES AND RESIDUAL IMPACTS

As mentioned in the impact assessment section, the identified Cultural features will be directly affected by the development. In light of the mentioned local legislations, it would be advisable to integrate or relocate these features within the development in order to avoid any irreversible damage or loss. The integration of these cultural features as landscaping elements within and/or at the periphery of the proposed development may help to mitigate the visual impact of the new structures keeping a testimony of the ancient agricultural landscape.

The residual impacts on the surrounding archaeology and cultural landscape will remain of major significance, due to the visual impact of the proposed development and the change in context of the area from agricultural to industrial. However, such impacts may be reduced to moderate significance through further mitigation measures, namely:

1. Reducing the new construction footprint and heights to the minimum possible;
2. Use sustainable approaches to landscape design around the proposed development to minimize the impact of new structures on the surrounding landscape, including the possible integration of significant cultural heritage features identified in this study;
3. Keep close communication with the cultural heritage regulator throughout the construction phase;
4. Use of adequate air pollution mitigation measures during the operational phase;
5. Compensating for any preventive maintenance operation of cultural heritage sites in proximity of the proposed development.

7.2 MONITORING

Archaeological features have already been identified and recorded within the AoI, therefore, no further archaeological investigation will be required. However, due to the possibility of underlying cultural remains at undisturbed levels within the overgrowth and the underlying deposits at the Southern-West, Southern and Southern-East limits of the AoI, it is recommended that an archaeological monitor be present during any ground disturbance works in these areas, so as to ensure the preservation of any existing cultural features that might be uncovered during the course of the proposed works.

8 SUMMARY OF IMPACTS

TABLE 4: SUMMARY OF IMPACTS TABLE – ARCHAEOLOGY & CULTURAL HERITAGE FEATURES

IMPACT TYPE AND SOURCE			IMPACT RECEPTOR		EFFECT & SCALE							PROBABILIT Y OF IMPACT OCCURRING (INEVITABLE / LIKELY/ UNLIKELY/ REMOTE/ UNCERTAIN)	OVERALL IMPACT SIGNIFICANC E	PROPOSED MITIGATION MEASURES	RESIDUAL IMPACT SIGNIFICANC E	OTHER REQUIREME NTS
IMPACT TYPE	SPECIFIC INTERVENT ION LEADING TO IMPACT	PROJECT PHASE (CONSTRUCT ION/ OPERATION/ DECOMMISSI ONING)	RECEPTOR TYPE	SENSITIVI TY & RESILIENC E TOWARD IMPACT	DIRECT/ INDIRECT/ CUMULATI VE	BENEFICIA L/ ADVERSE	SEVERITY	PHYSICAL/ GEOGRAPH IC EXTENT OF IMPACT	SHORT-/ MEDIUM-/ LONG- TERM	TEMPORAR Y (INDICATE DURATION) / PERMANEN T	REVERSIBL E (INDICATE EASE OF REVERSIBI LITY)/ IRREVERSI BLE					
Loss of features and change in the context and cultural landscape	Excavation works – Superficial demolition/dismantling of rural structures	Construction	Identified cultural features (A,B and rubble walls)	High	Direct	Adverse	High	Limited	Long term	Permanent	Irreversible	Likely	Major	Integration or Relocation of significant features if technically possible	Moderate (depending on the outcome of proposed mitigation strategies)	N/A
Potential damage to cultural and/or archaeological features below the ground	Excavations works – Below the ground	Construction	Possible archaeological features located at the southern limits of the scheme	High	Direct	Adverse	High	Limited	Long term	Permanent	Irreversible	Inevitable	Major	Constant monitoring and use of sensitive construction methods.	Moderate (depending on the outcome of the proposed interventions)	N/A
Deterioration of cultural landscape	Presence of construction including other proposed developments within ECOHIVE complex	Construction/ Operation	Cultural Landscape: AoI and archaeological sites of Taz Zebbugija and Ta' Hammud)	High	Cumulative	Adverse	High	Site and immediate surroundings	Long term	Permanent	Irreversible	Inevitable	Major	Reduce footprints and height to the minimum; use of sustainable approaches to landscape design.	Major	N/A
Weathering of limestones buildings	Increase of air pollution	Operation	Archaeological sites of Taz Zebbugija and Ta' Hammud	High	Indirect	Adverse	Medium	Limited	Long term	Permanent	Reversible	Likely	Minor	Ensure equipment is well maintained and within national	Negligible	N/A

IMPACT TYPE AND SOURCE			IMPACT RECEPTOR		EFFECT & SCALE							PROBABILIT	OVERALL	PROPOSED	RESIDUAL	OTHER
IMPACT TYPE	SPECIFIC INTERVENTION LEADING TO IMPACT	PROJECT PHASE (CONSTRUCTION/ OPERATION/ DECOMMISSIONING)	RECEPTOR TYPE	SENSITIVITY & RESILIENCE TOWARD IMPACT	DIRECT/ INDIRECT/ CUMULATIVE	BENEFICIAL/ ADVERSE	SEVERITY	PHYSICAL/ GEOGRAPHIC EXTENT OF IMPACT	SHORT-/ MEDIUM-/ LONG-TERM	TEMPORARY (INDICATE DURATION) / PERMANENT	REVERSIBLE (INDICATE EASE OF REVERSIBILITY)/ IRREVERSIBLE	Y OF IMPACT OCCURRING (INEVITABLE / LIKELY/ UNLIKELY/ REMOTE/ UNCERTAIN)	IMPACT SIGNIFICANCE	MITIGATION MEASURES	IMPACT SIGNIFICANCE	REQUIREMENTS
														emission limits via regular monitoring; Compensating for preventive maintenance operations.		

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LEGISLATIONS:

Authority for Transport in Malta Act XV of 2009 (CAP 499)

Cultural Heritage Act 2002 (CAP 445)

Development Planning Act 1992 (CAP 356)

Occupational Health and Safety Authority Act 2000 (CAP 424)

The Environment Protection Act: 1991: Rubble Walls and Rural Structures (Conservation and Maintenance Regulations) 1997- Legal Notice 160, amended by Legal Notices 169 of 2004 and 426 of 2007. Available at [LEGISLATION MALTA](#)

CONVENTIONS:

European Protection of the Architectural Heritage of Europe, Granada 1985 (Granada Convention) Council of Europe Treaty Series no. 121

European Convention on the Protection of the Archaeological Heritage (Revised), Valletta 1992 (Valletta Convention) Council of Europe Treaty Series no. 143

UNESCO Convention concerning the Protection of the World Cultural and Natural Heritage, Paris 1972

UNESCO Convention on the Protection and Promotion of the Diversity of Cultural Expression, Paris 2005

POLICIES:

Local Plans - Central Malta Local Plan (2006), Grand Harbour Local Plan (2002), North West Local Plan (2006), North Harbour Local Plan (2006)

Structural Plan for the Maltese Islands (1990)

APPENDIX I

CULTURAL HERITAGE DATA CAPTURE SHEETS

FEATURE A

CULTURAL HERITAGE DATA CAPTURE SHEET: Ref. A Figure 61			
Site Location Maghtab - Naxxar	Category Architecture	Type Rural	Status Fair/Good
Eastings 449845.96	Northings 3977751.72	Feature Dry-Stone Hut	Period Unknown
Description Rubble/Dry-stone hut: Rubble and dry-stone vernacular single floor building, primarily used for storage/temporary shelter, buttered to a E-W oriented rubble wall. Constructed primarily of irregular natural dry stones. The structure has a sub-squared shape with a corbelled roof and single entrance facing East. It is approximately 1,60m high x 2,20m wide, with walls approximately 0.40m thick.			
Existing Legal Protection Legal Notice 160 of 1997,; Rubble Walls and Rural Structures (Conservation and Maintenance) Regulations of 1997 in which "rural structure" means any traditional rural construction		Comments: The regulations state that it is not lawful for any person to demolish or to endanger by any means whatsoever, the stability or integrity of any rubble wall or of any rural construction, structure or tenement.	
Site Map - Scale 1:4000 			

Archaeological Characteristics 	
Conditions Fair/Good. Abandoned	Degree of Protection Legal Notice 160 of 1997 prohibits dismantling of such walls except by permission from the competent authority
State of Security N/A	Proposed Utilization N/A
Basic Bibliography Din l-Art Helwa: Abandoned rural buildings available at https://dinlarthelwa.org/heritage-sites/managed-heritage-sites/	
Compiled by: Samuele Serini Date: 29/07/2024	Checked by: Vincenzo Cherubini Date: 29/07/2024

FEATURE B

CULTURAL HERITAGE DATA CAPTURE SHEET: Ref. B Figure 61			
Site Location Maghtab - Naxxar	Category Architecture	Property Function Agricultural	Property Owner Private
Eastings 449938.02	Northings 3977893.06	Feature Farmhouse	Period Unknown
Description Rural Building: One storey structure, possible farmhouse. The structure has a sub-rectangular shaped plan with a single entrance facing South. It is approximately 3.50m high x 5.00m long x 2.00m wide.			
Scheduled by MEPA No		Degree of Protection N/A	
Site Map - Scale 1:4000 			

Archaeological Characteristics



Conditions	Existing Legal Protection
Delapidated State	Legal Notice 160 of 1997,; Rubble Walls and Rural Structures (Conservation and Maintenance) Regulations of 1997 in which "rural structure" means any traditional rural construction
State of Security	Proposed Utilization
N/A	N/A
Basic Bibliography	
N/A	
Compiled by: Samuele Serini Date: 29/07/2024	Checked by: Vincenzo Cherubini Date: 29/07/2024

RUBBLE WALLS

CULTURAL HERITAGE DATA CAPTURE SHEET			
Site Location Maghtab - Naxxar	Category Architecture	Type Rural	Status Poor to Fair/Good
Eastings N/A	Northings N/A	Feature Rubble and Dry-Stone Walls	Period Unknown
Description Rubble/Dry-stone walls and other retaining walls: Rubble and other various retaining walls were/are field and/or property boundary walls, constructed primarily of irregular natural dry stones. The Area of Interest contained rubble walls built with traditionally rubble stones. The walls are mainly in poor state of conservation and have been clearly altered, added to or repaired with the introduction of larger roughly hewn cut limestones.			
Existing Legal Protection Legal Notice 160 of 1997		Comments: L.N. 160/97 prohibits the dismantling of such walls except by petition from the competent authority	
Site Map - Scale 1:4000 			

Archaeological Characteristics



Conditions Some abandoned, some partly collapsed, other repaired and rebuilt.	Degree of Protection Legal Notice 160 of 1997 prohibits dismantling of such walls except by permission from the competent authority
State of Security N/A	Proposed Utilization N/A
Basic Bibliography N/A	
Compiled by: Samuele Serini Date: 29/07/2024	Checked by: Vincenzo Cherubini Date: 29/07/2024