

PA/02825/25: TO DEMOLISH AN EXISTING CONSTRUCTION YARD AND BUILT STRUCTURES, PROPOSED OVERSITE EXCAVATION TO ACCOMMODATE THE CONSTRUCTION OF A COMMERCIAL CAR PARK, SUPERMARKET, A MIXED-USE OUTLET VILLAGE (CONSISTING OF CLASS 2A MEDICAL, CLASS 3C SPORT CENTRE, CLASS 4A OFFICES, CLASS 4B RETAIL, CLASS 4C COFFEE SHOPS, CLASS 4D RESTAURANTS, BANK) AND THREE-STAR HOTEL HAVING 120 ROOMS. SITE AT ELBROS CONCRETE LTD, TRIQ L-INDUSTRIJA C/W, TRIQ IL-MADONNA TAD-DAWL, KIRKOP

ENVIRONMENT IMPACT ASSESSMENT REPORT





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Quality Assurance

Proposed Commercial Complex, Triq l-Industrija, Hal Kirkop Environmental Impact Assessment Report August 2026

Report for: **Qormi Construction Ltd**

Revision Schedule

Rev	Date	Details	Written by:	Checked by:	Approved by:
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Adi Associates Environmental Consultants Ltd, Malta, prepared this Environmental Impact Assessment Report.

The *Environmental Impact Assessment Regulations, 2017* (S.L. 549.46), Section 17(3) requires that each of the Consultants declares that they have no conflict of interest that may affect any aspect covered by the Regulations.

We declare that Adi Associates Environmental Consultants Ltd and its staff have no conflict of interest in the proposed development.

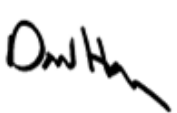
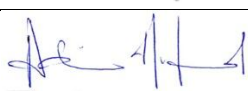
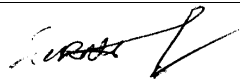
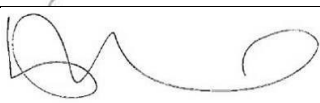
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Adi Associates Environmental Consultants Ltd takes responsibility for statements and conclusions contained in the parts of the report prepared directly by its staff. However, statements made and conclusions drawn by the independent sub-consultants who prepared the baseline studies reproduced in the Technical Appendices, and which informed the Environmental Impact Assessment Report remain the responsibility of the individual sub-consultants.



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APPENDICES

Appendix I: A3 Photographs and photomontages

I. INTRODUCTION

- I.1. This Environmental Impact Assessment Report (EIA Report) describes a proposal to construct a mixed-use commercial complex on the site of the Elbros Construction Yard, on Triq L-Industrija, Hal Kirkop, see **Figure I**. The development includes an Outlet Village with a supermarket and food and beverage outlets, a hotel, offices, a medical centre, and a sports centre, with three levels of underground parking.
- I.2. The project is proposed by Qormi Construction Ltd, hereinafter referred to as 'the Applicant'; the project is hereinafter referred to as 'the Scheme'.
- I.3. The Applicant explains that the existing operations on the Scheme site are to be relocated to another of Elbros Construction's sites – a Pre-cast Factory located in Hal Far.

BACKGROUND

- I.4. The Scheme site is currently occupied by the Elbros Construction Yard, having previously been a quarry. The planning history reveals that permission was granted in 1998 "To erect workshop and ancillaries" (under PA/06701/94). Subsequent permits for extension of the facilities / activities on site were issued in 2002 (under PA/00359/00 and PA/03997/01).
- I.5. In November 2023, the Applicant held a meeting with the Environment & Resources Authority (ERA), to discuss the taking forward of the Scheme. Following the meeting, in December 2023, the ERA requested submission of a Project Description Statement (PDS) for the Scheme. This was submitted in March 2025. In July 2025 ERA requested that an Environment Impact Assessment be carried out for the Scheme, as follows:

Screening (Annex I) has concluded that the proposal is likely to have a significant impact on the environment and therefore the submission of an EIA is required. This is to address impacts in terms of Land and resource use, landscape and visual amenity; construction-phase impacts (geology/ geo-environment and hydrogeology); Emissions to air with respect to traffic generation in and around the proposed site; and landscaping and exterior lighting.

- I.6. ERA issued Terms of Reference for the EIA in November 2025.

PURPOSE OF THE EIA REPORT

- I.7. The purpose of this EIA Report is to present the findings of the EIA. EIA is the process of systematically assessing the likely significant environmental impacts of development proposals. EIA also ensures that the significance of these impacts, and the scope for reducing them, is clearly understood by both the public and by ERA and the PA, before a decision is made on whether the development should be approved.

STRUCTURE OF THE EIA UPDATE REPORT

- I.8. Following this introduction, the EIA Report is structured as follows:
- **Chapter 2:** EIA Methodology
 - **Chapter 3:** Description of Site and Scheme
 - **Chapter 4:** Legislation and Policy Context
 - **Chapter 5:** Geo-Environment
 - **Chapter 6:** Air Quality
 - **Chapter 7:** Archaeology & Cultural Heritage
 - **Chapter 8:** Landscape and Visual Amenity
 - **Chapter 9:** Key Impacts, Cumulative Effects and Summary of Mitigation
 - **Appendix I:** A3 Photographs and photomontages
- I.9. The EIA Report also contains the following Technical Appendices (compiled separately as **Volume 2** of the EIA Report):
- **Technical Appendix 1:** Terms of Reference and Method Statements
 - **Technical Appendix 2:** Geo-Environment Baseline Report & Geo-Technical Survey
 - **Technical Appendix 3:** Air Quality Baseline Measurements & Air Dispersion Model
 - **Technical Appendix 4:** Archaeology & Cultural Heritage Baseline Report
- I.10. The EIA Report includes a Non-Technical Summary in Maltese and English.

Figure I.1: Location of the Scheme Site



2. EIA METHODOLOGY

INTRODUCTION

- 2.1. This chapter sets out the broad methodology that was used for the Environmental Impact Assessment (EIA) of the Scheme. It outlines the key stages that were followed, in line with EIA best practice. The chapter also explains how the significance of impacts was assessed, and how this was a consistent process throughout the EIA.

THE EIA PROCESS

- 2.2. The current legislation on the EIA process is contained in the *Environmental Impact Assessment Regulations* (S.L. 549.46).
- 2.3. The Environment & Resources Authority (ERA) has directed that an EIA Report be prepared for the Scheme.

Terms of Reference

- 2.4. The Terms of Reference (ToR) for the EIA were prepared by ERA in consultation with the relevant Government Departments. The final version of the ToR is included in **Technical Appendix I: Terms of Reference and Method Statements**.
- 2.5. The ToR were formulated following a scoping exercise, undertaken by ERA, to identify the issues to be considered in the EIA. The ToR focused on those impacts of the Scheme considered by ERA to be significant and, therefore, requiring further assessment, and avoiding the examination of all environmental impacts. The ToR also outlined the various components of the EIA.

Method Statements

- 2.6. As required by the EIA Regulations, the Consultants involved in this EIA were approved by ERA.
- 2.7. Method Statements were prepared in respect of the topic areas: *landscape and visual amenity, geo-environment, air quality and cultural heritage*.
- 2.8. The Method Statements addressed the following:
- Introduction, listing the objectives of the study and reference to the ToR;
 - Details of baseline survey methodology;
 - Description of the Area of Influence;
 - Field survey methodology;
 - Analytical methodology;
 - Evaluation of data;

- Identification of impacts;
- Prediction of impacts;
- Impact significance; and
- Mitigation.

2.9. The Method Statements were accepted by ERA and subsequently used as the basis for carrying out the individual baseline surveys. The Method Statements are included in **Technical Appendix 1: Terms of Reference & Method Statements**.

EIA Approach

- 2.10. Good practice necessitates that EIA be treated as an iterative process, rather than a one-off, post-design environmental appraisal. In this way, the findings from the EIA can be fed into the design process, resulting in a more environmentally sensitive project. This approach was adopted for this EIA.
- 2.11. Baseline surveys for the specialist EIA topics were undertaken by the Consultants based on the Area of Influence (A of I) agreed with ERA for each topic area. A detailed assessment of the Scheme's impact on the features present within the A of I was undertaken, and any potential environmental benefits of the Scheme were identified.

Significance of Impacts

- 2.12. Assessment of the significance of impacts arising from a development is a key stage in the EIA process. This judgement is critical in informing the decision-making process. However, defining significance can be difficult. In general terms, environmental significance involves assessing the amount of change to the environment perceived to be acceptable to the community including cumulative impacts (Sippe, 1999¹, Gibson *et al*, 2005²). With the result of an EIA dependent on the determination of significance, it becomes of critical importance to the EIA process (Briggs & Hudson, 2013³).
- 2.13. The following criteria were used in this EIA to assess the significance of an impact:
- Type of impact (adverse / beneficial);
 - Extent and magnitude of impact;

¹ Sippe R. 1999. Criteria and standards for assessing significant impact. In: Petts J, editor. Handbook of environmental impact assessment volume 1: environmental impact assessment: process, methods and potential. Oxford: Blackwell Science; pp. 74–92. [Google Scholar]

² Gibson RS, Hassan S, Holtz J, Tansey, Whitelaw G. 2005. Sustainability assessment criteria, processes and applications. London: Earthscan Publications. [Google Scholar]

³ Briggs S, Hudson M. 2013. Determination of significance in ecological impact assessment: past change, current practice and future improvements. Environ Impact Assess Rev. 38:16–25.10.1016/j.eiar.2012.04.003 [Crossref] [Web of Science ®], [Google Scholar]

- Direct or indirect impact;
 - Duration of impact (short term / long term; permanent / temporary);
 - Comparison with legal requirements, policies and standards;
 - Sensitivity of receptor (residential dwellings, hotels, recreational areas, etc.);
 - Probability of impact occurring (certain, likely, uncertain, unlikely, remote);
 - Reversibility of impact;
 - Scope for mitigation / enhancement (very good, good, none); and
 - Residual impacts.
- 2.14. Using these criteria, the significance of the impacts arising from the Scheme was categorised in the EIA Report, as follows:
- **Not significant;**
 - **Minor significance;**
 - **Moderate significance** (in the case of the visual amenity assessment); and
 - **Major significance.**
- 2.15. Definitions of the meaning of the ‘significance categories’ above in relation to each topic area are included in the topic area chapters (see **Chapter 5** to **Chapter 8** of the EIA Report). However, in general terms, if an impact is ‘not significant’, it is considered to be environmentally acceptable; an impact of ‘minor significance’ refers to an impact that is considered to be manageable; an impact of ‘moderate significance’ refers to an impact that may be manageable in certain circumstances, although it is likely to require implementation of suitable mitigation measures; and an impact of ‘major significance’ refers to an impact that is considered to be environmentally damaging such as to require that the Scheme be redesigned, or that substantial mitigation measures be put in place to minimise the impact.
- 2.16. The EIA Report includes an assessment of the significance of predicted impacts and, following the implementation of any proposed mitigation measures, the significance of any residual impacts. A summary of the identified significant impacts is included in **Chapter 9**. The recommended mitigation measures, and the residual impacts, are described in respect of each topic area, at the end of the relevant chapter (see **Chapter 5** to **Chapter 8**).

UNCERTAINTY

- 2.17. The EIA process is designed to enable good decision-making based on the best possible information about the environmental implications of a development. There will always be some uncertainty in predicting potential impacts, as to the exact nature

and scale of the impacts. This arises through shortcomings in information, doubts, or lack of certainty on the likelihood that an incidence would occur, and / or due to the limitations of the prediction process itself. Where uncertainties have arisen, and where they remain, this is clearly stated in the EIA Report.

CONSULTATION

- 2.18. There has been consultation with ERA throughout the EIA process. Additionally, at the outset of the EIA process, the Consultants invited the Hal Kirkop Local Council to meet to discuss the matters it considered to be important for the EIA.
- 2.19. The Consultants met with the Hal Kirkop Local Council on 18th May 2026; the feedback is described in **Chapter 3** of this EIA Report.

PRESENTATION OF THE EIA REPORT

- 2.20. The EIA Report is divided into three main parts following this chapter.
- 2.21. Part 1 comprises **Chapters 3** and **4**:
- **Chapter 3** explains the purpose of and objectives of the Scheme, and includes a description of the site and its surroundings; and
 - **Chapter 4** summarises the relevant legislation and policy context, including planning policies.
- 2.22. Part 2 comprises **Chapters 5** to **8**, which describe the potential environmental impacts of the Scheme in relation to each of the topic areas. Each of the chapters is structured as follows:
- Introduction: identifying the key issues and how the chapter relates to the ToR;
 - Assessment methodology: summarising the methods used in undertaking the baseline survey;
 - Existing conditions: a summary of the existing baseline situation and trends irrespective of the Scheme; and
 - Assessment of impacts arising from the Scheme, identifying:
 - Potential impacts: a summary of the potential impacts of the Scheme;
 - Prediction and significance of impacts: a prediction of the likely impacts of the Scheme against the baseline situation and an assessment of the significance of the impacts;
 - Mitigation measures: a summary of potential mitigation / enhancement measures, to offset any identified adverse impacts;
 - Residual impacts: a clear statement of those impacts that still have an impact following mitigation, indicating the significance of the residual

impact; and

- Summary: a summary table of the impacts.

2.23. Part 3 comprises **Chapter 9**, which addresses the cumulative effects of the Scheme, and summarises the impacts and proposed mitigation measures.

3. DESCRIPTION OF SCHEME AND SITE

INTRODUCTION

- 3.1. This chapter describes the Scheme. It explains the purpose and objectives of the Scheme and includes a description of the Scheme site and its surroundings.

OBJECTIVES OF THE SCHEME

- 3.2. As explained by the Applicant, the primary objective of the Scheme is to redevelop the Elbros Construction Yard into an Outlet Village with a supermarket and food and beverage outlets, a hotel, offices, a medical centre, and a sports centre, with three levels of underground parking.

CONSULTATION

- 3.3. As mentioned in **Chapter 2**, the EIA consultants held a consultation meeting with the Hal Kirkop Local Council.
- 3.4. While the Local Council noted the improved land use of the Scheme site, especially considering the current industrial use, the Council did raise a concern over an increase in traffic generation in the area. Current issues in relation to traffic generation during peak hours are of a concern so traffic management is an important aspect to be considered.

ASSESSMENT OF ALTERNATIVES

Alternative Sites

- 3.5. The Applicant did not consider any alternative sites for the Scheme. However, there have been a number of design options explored for the Scheme. The Applicant explains that the design evolution has been informed by discussions with the PA, and taking account of the relevant policy objectives, as well as the obligations for LEED certification. As described below, it is envisaged to pursue LEED Platinum Certification.

Zero Option (Do-nothing Scenario)

- 3.6. The Terms of Reference (ToR) issued by ERA require that the alternative assessment considers the zero option, or do-nothing scenario, which envisages there being no intervention on the site in connection with the Scheme. This alternative option considers the way the site would develop in the absence of the Scheme.
- 3.7. With no intervention on the Scheme site in connection with the Scheme, the site would remain operating as a construction yard, with the associated operational impacts including dust and noise generation.

Alternative Layouts and Techniques

- 3.8. As mentioned, the Applicant consulted the Planning Authority throughout the development of the Scheme plans and different layouts were proposed.

DESCRIPTION OF THE SITE AND ITS SURROUNDINGS

Scheme Site

- 3.9. The site lies within the Ħal Kirkop Local Council administrative area (see **Figure 3.1**). The majority of the Scheme site is a designated 'Area of Containment', see **Figure 3.1**. The Scheme site lies immediately adjacent to the Malta International Airport (MIA) complex. There is a large Industrial Area located immediately opposite the Scheme site to the south. The Ħal Kirkop Development Zone is located a distance of approximately 450 m (plan distance) to the south of the Scheme site.

CHARACTERISTICS OF THE SCHEME SITE

- 3.10. The Scheme site occupies an area of approximately 28,569 m². As mentioned, the site is currently occupied by the Elbros Construction Yard, having previously been a quarry. **Figure 3.2** shows images of the Scheme site currently.
- 3.11. The Scheme site fronts Triq L-Industrija along its southern boundary, and the main access to the site is from Triq L-Industrija. The site also has a frontage on Triq il-Madonna tad-Dawl (along its eastern boundary) and there is a second access point from this road, on the northwestern corner of the site.
- 3.12. The South Malta Local Plan Environmental Constraints Map shows a borehole within the Scheme site (see **Figure 3.1**). The Applicant has confirmed that this borehole still exists and that water is still being extracted for use on site.

CHARACTER OF THE AREA AROUND THE SCHEME SITE

Land Uses

- 3.13. A land use survey of the area surrounding the Scheme site was conducted in February 2024. The land uses within approximately 250 m of the site are illustrated in **Figure 3.3**, and images of the surroundings are shown in **Figure 3.4**.
- 3.14. The primary land uses in the area are a mix of industrial uses (manufacturing and construction-related), utilities and infrastructure, and transportation. As mentioned, the Scheme site itself lies partly within an Area of Containment and was a former quarrying site. Immediately to the south of the Scheme site is a large Industrial Area, occupied by the ST Microelectronics manufacturing complex. There is an Enemalta Distribution Centre located immediately to the south of the Industrial Area.
- 3.15. The MIA immediately adjoins the Scheme site to the east and also runs at a distance to the north of the site; the main runway comes to within 160 m (plan distance) of the Scheme site at its closest point.
- 3.16. The village of Ħal Kirkop is located to the south of the Scheme site. As mentioned, the Development Zone boundary is located approximately 450 m (plan distance) from the Scheme site. There is a farmhouse immediately adjacent to the Scheme site, on the western boundary, on Triq il-Madonna tad-Dawl.

- 3.17. The areas north and west of the Scheme site are characterised by quarries and related activity. There are agricultural land and several farms located to the southwest of the Scheme site.

Natural and Cultural Heritage Designations

- 3.18. Most of the Scheme site lies within the L-Ajruport ta' Ħal-Luqa Bird Sanctuary (designated under Legal Notice (LN) 144 of 1993 / Subsidiary Legislation (SL) 549.42) - see **Figure 3.5**. Though it provides protection to avifauna, this designation was established more as protection of the airport space at a time when the only protective designation available was that of 'Bird Sanctuary'.
- 3.19. The nearest cultural heritage designation is a Class B Menhir (Site of Archaeological Importance) located approximately 500 m to the south, on Triq Valletta (see **Figure 3.6**). The South Malta Local Plan identifies an Archaeologically Sensitive Area extending to include part of the western boundary of the Scheme site (see **Figure 3.1**).
- 3.20. **Chapter 7** of this EIA Report describes in detail the scheduled and recorded cultural heritage features present in the area surrounding the Scheme site, as well as the assessment of the impact of the Scheme on these heritage features. Accordingly, this section makes reference to the location of scheduled cultural heritage features only. The location of these features is shown in **Figure 3.6**.

Figure 3.1: South Malta Local Plan Environmental Constraints Map
(Scheme site highlighted in red)

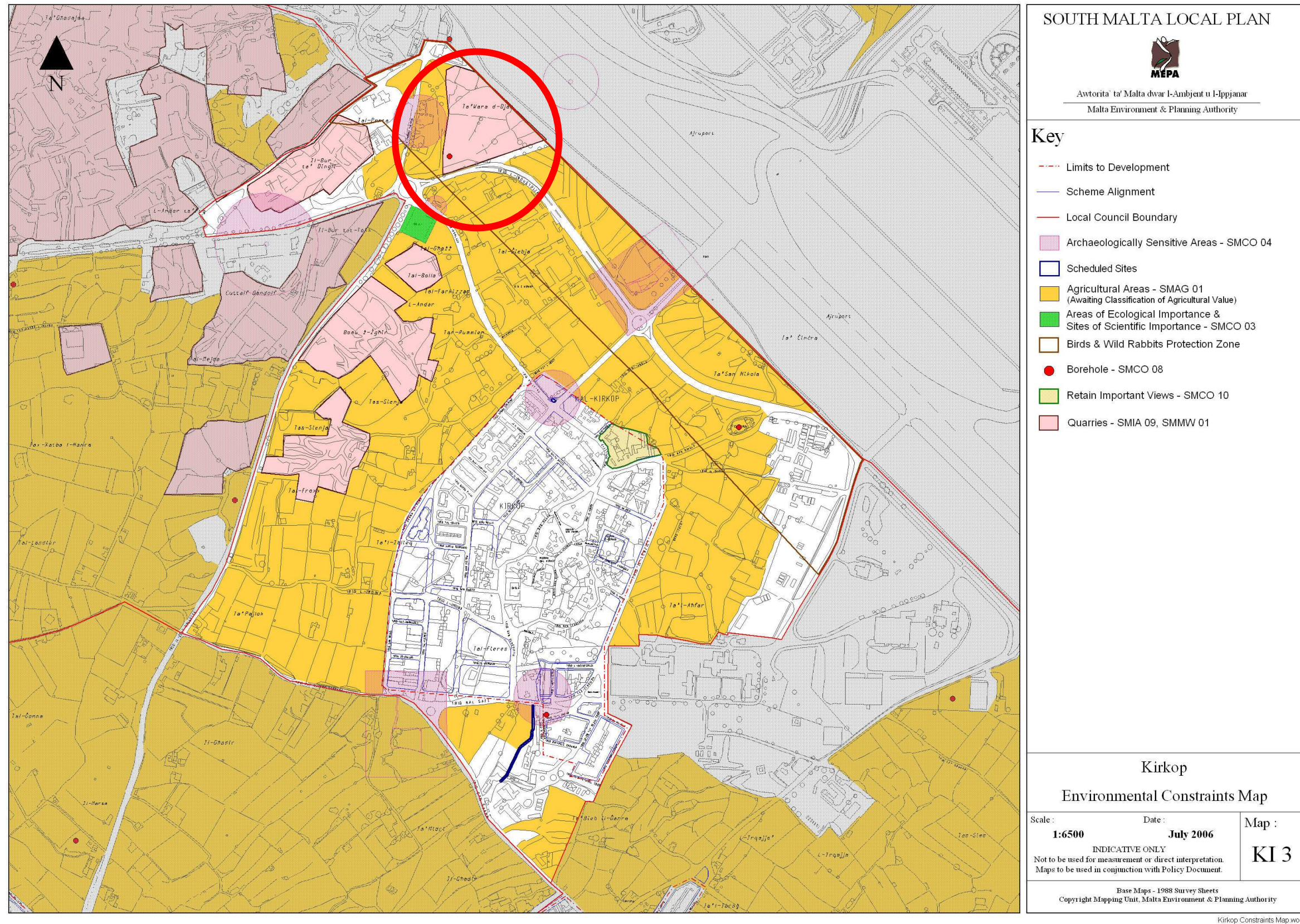


Figure 3.2: Images of the Scheme Site





View of the eastern portion of the Scheme site (looking east)



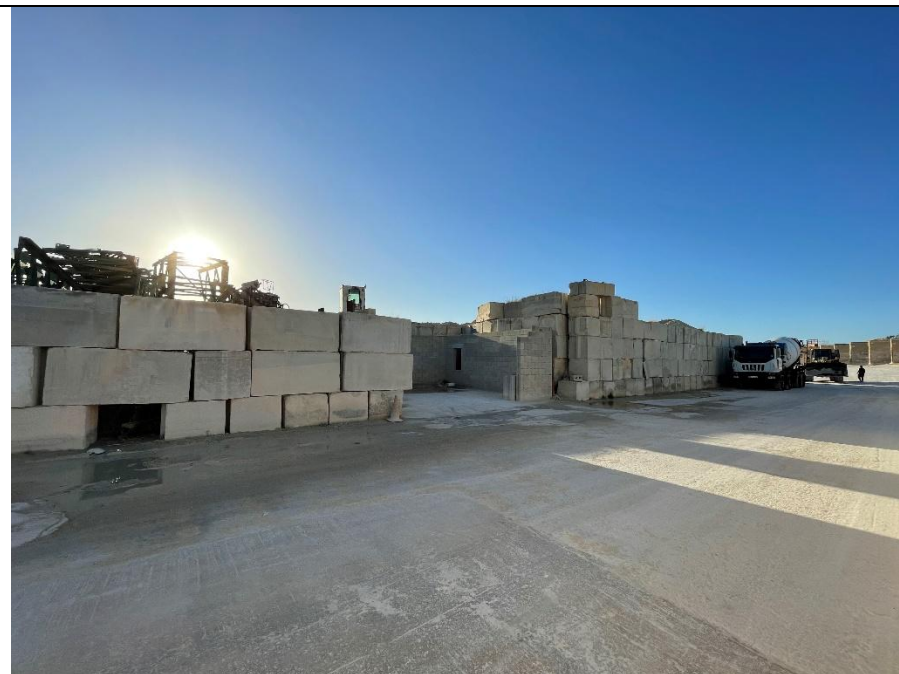
View of the northern portion of the Scheme site (looking north)



View of the main access road through the Scheme site (looking south)



View of the main access road through the Scheme site (looking north)



View of the western portion of the Scheme site (looking northwest)

Figure 3.3: Surrounding Land Uses

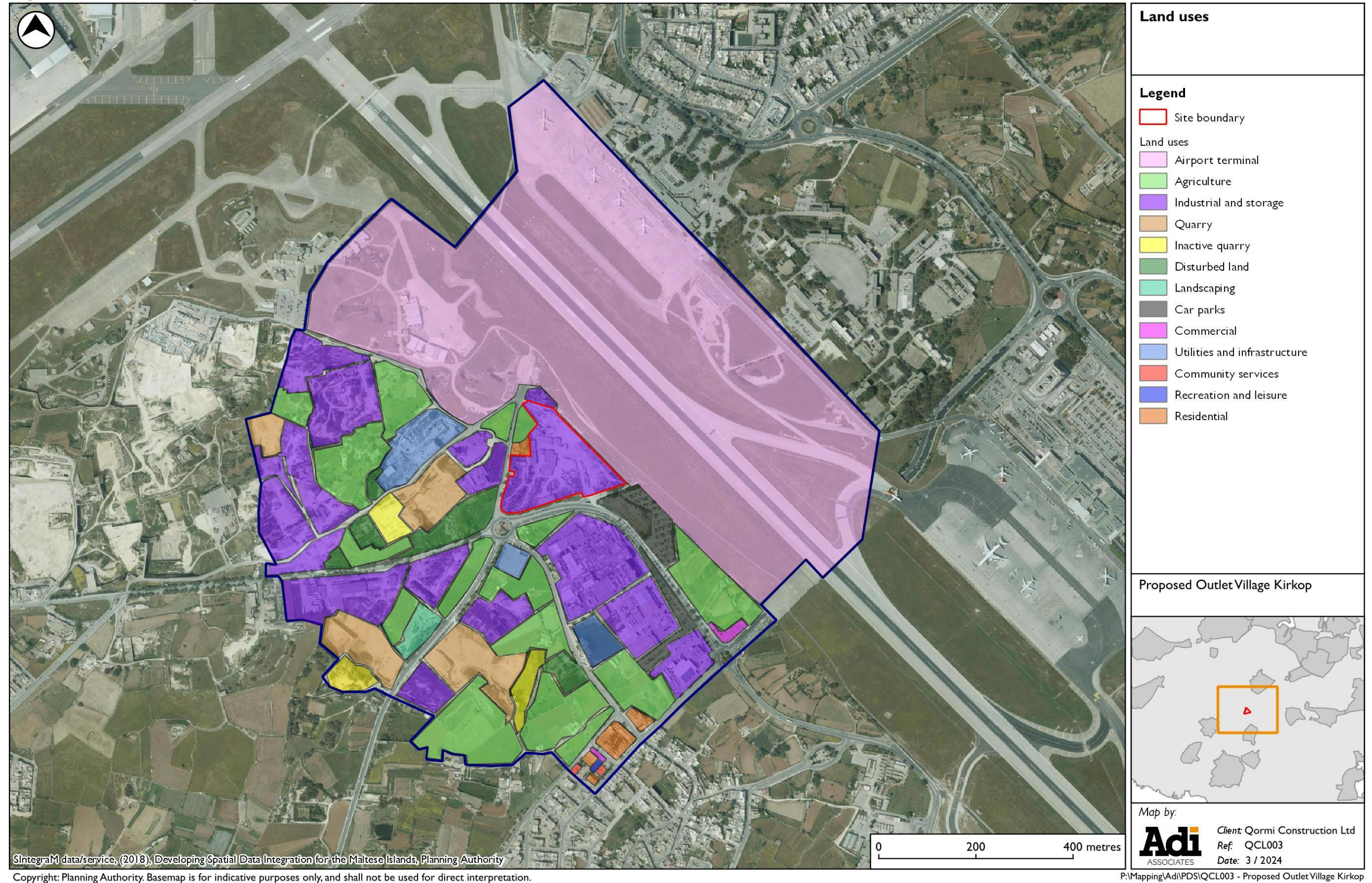


Figure 3.4: Images of the Land Uses in the Vicinity of the Scheme site





Farmhouse adjacent to the Scheme site on Triq il-Madonna tad-Dawl



Residential development at the Edge of the Hal Kirkop Development Zone (junction of Triq Valletta and Triq Danny Cremona)



Agricultural land in the vicinity of the Scheme site

Figure 3.5: Natural Heritage Designations

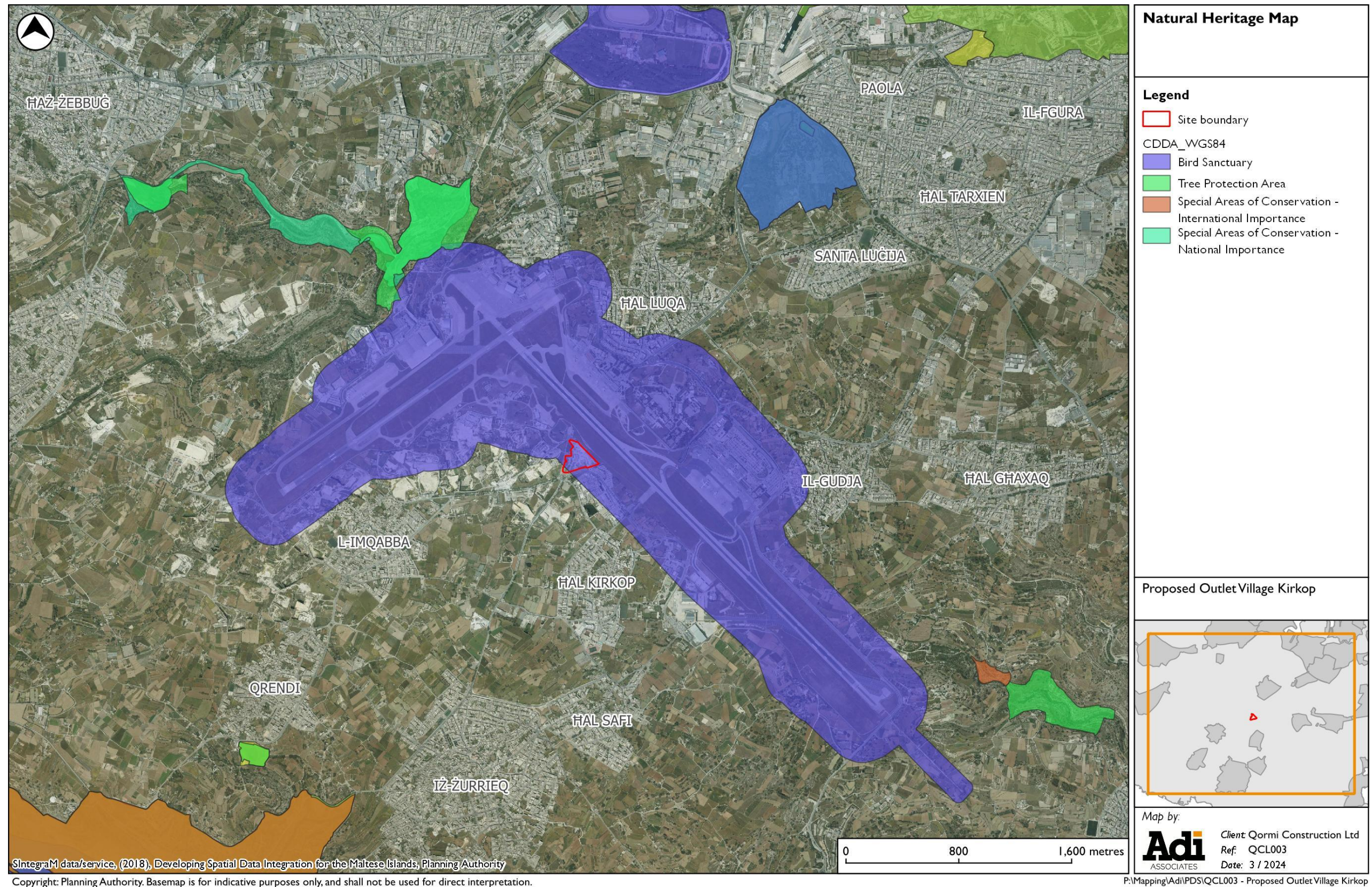


Figure 3.6: Cultural Heritage Designations



SCHEME DESCRIPTION

- 3.21. The Scheme comprises a mixed-use commercial complex, having an Outlet Village (including a supermarket and food and beverage outlets), a hotel, offices, a medical centre, and a sports centre. There will be three levels of underground parking. The complex is set in landscaped grounds, including a 'Sports Park'. **Figure 3.7** shows the Scheme layout, including in the form of an aerial view⁴. **Figure 3.8** shows the floor plan layouts.
- 3.22. As mentioned, the Scheme site occupies an area of approximately 28,569 m². The Scheme will have a cumulative built footprint of approximately 11,700 m² (approximately 41% of the total site area). The cumulative Gross Floor Area (GFA)⁵ will be approximately 110,920 m². **Table 3.1** shows a breakdown of the GFA. The Scheme will have a varied height profile, ranging from two to four-storey equivalent, and an overall height of approximately 18.50 m.

Table 3.1: Breakdown of the Gross Floor Area

Use	GFA
Retail	13,571 m ²
Supermarket (including warehousing space of 2,738 m ²)	7,079 m ²
Offices	6,791 m ²
Hotel (106 guestrooms)	6,902 m ²
Food and Beverage (5 restaurants including 1 cafeteria and 1 roof garden bar)	2,240 m ²
Medical Centre	2,100 m ²
Sporting Centre	1,749 m ²
Underground car park (3 levels – 1,367 car parking spaces, including 79 scooter spaces)	53,483 m ²
Technical / circulation areas	17,005 m ²
Total Gross Floor Area	110,920 m²

- 3.23. The Applicant explains that the design for the Scheme has evolved following an examination of, and with reference to, three contextual elements – the quarry landscape, the cultural landscape, and the natural landscape. This has influenced the landscaping approach, in respect of the setting of the development overall and the treatment of the Sports Park and the external spaces within the built-up area, as well

⁴ It is noted that, although some revisions to the Scheme were made, this image is still on the whole representing the proposal.

⁵ GFA is quoted in accordance with Regulation 1 of the EIA Regulations, 2017 (S.L. 549.46) where GFA is defined as “the total combined area of all the floors of a building as measured externally without any deduction of internal yards, the spaces overlying them or the thickness of internal or external walls and also includes all cellars, basements and roofs”

as the treatment of the site boundary and access points. The proposed landscaping plan for the various levels is shown in **Figure 3.9**.

- 3.24. A cursory survey of the existing vegetation within and bordering the Scheme site has been carried out (by the Applicant) and the rubble walls within, bordering, and in the vicinity of the site have been identified. **Figure 3.10** shows the vegetation survey. The survey identifies a number of alien species within and on the boundary of the site. It is envisaged that the alien species within the Scheme site will be removed as part of the new landscaping works. **Figure 3.11** also identifies a line of *Ficus* trees running outside of the Scheme site on its southern boundary. These appear to be mature *Ficus macrocarpa*, and there are several new plantings (also see the images in **Figure 3.2** above). These *Ficus* trees will be retained (being on public land outside of the site boundary). The *Pinus halepensis* on the western boundary of the Scheme site, on Triq il-Madonna tad-Dawl (also see **Figure 3.2**) will also be retained, where they will border the Sports Park. It is envisaged that existing rubble walls along the western boundary and within the northern section of the site will be retained, and that the boundary treatment will have regard to these and the 'limestone' context. It is proposed to install roof gardens on top of various of the buildings forming part of the shopping centre).
- 3.25. The Applicant explains that the external lighting regime has been designed having regard to a Ratio of Upward *Light Output (RULO)* of zero and obtrusive *light principles*, to obtain the maximum out of the electrical illumination (and also minimise impact on surrounding areas). **Figure 3.13** illustrates what is envisaged at this stage in terms of the night-time lighting regime.
- 3.26. **Figure 3.14** illustrates that all traffic (including service vehicles) will enter the Scheme site from Triq il-Madonna tad-Dawl, at the point of the existing access point on the northern corner of the site. With the exception of service vehicles, all traffic will also leave the Scheme site via this access point. Service vehicles will leave via a new access along the southern boundary of the site, emerging onto Triq L-Industrija. There will be pedestrian access from both roads.
- 3.27. The Scheme is proposing 1,278 car parking spaces that include 33 access-for-all spaces. There are also five van-accessible spaces, 26 cycle racks, and 39 scooter parking spaces. The parking will be underground (in three basement levels).

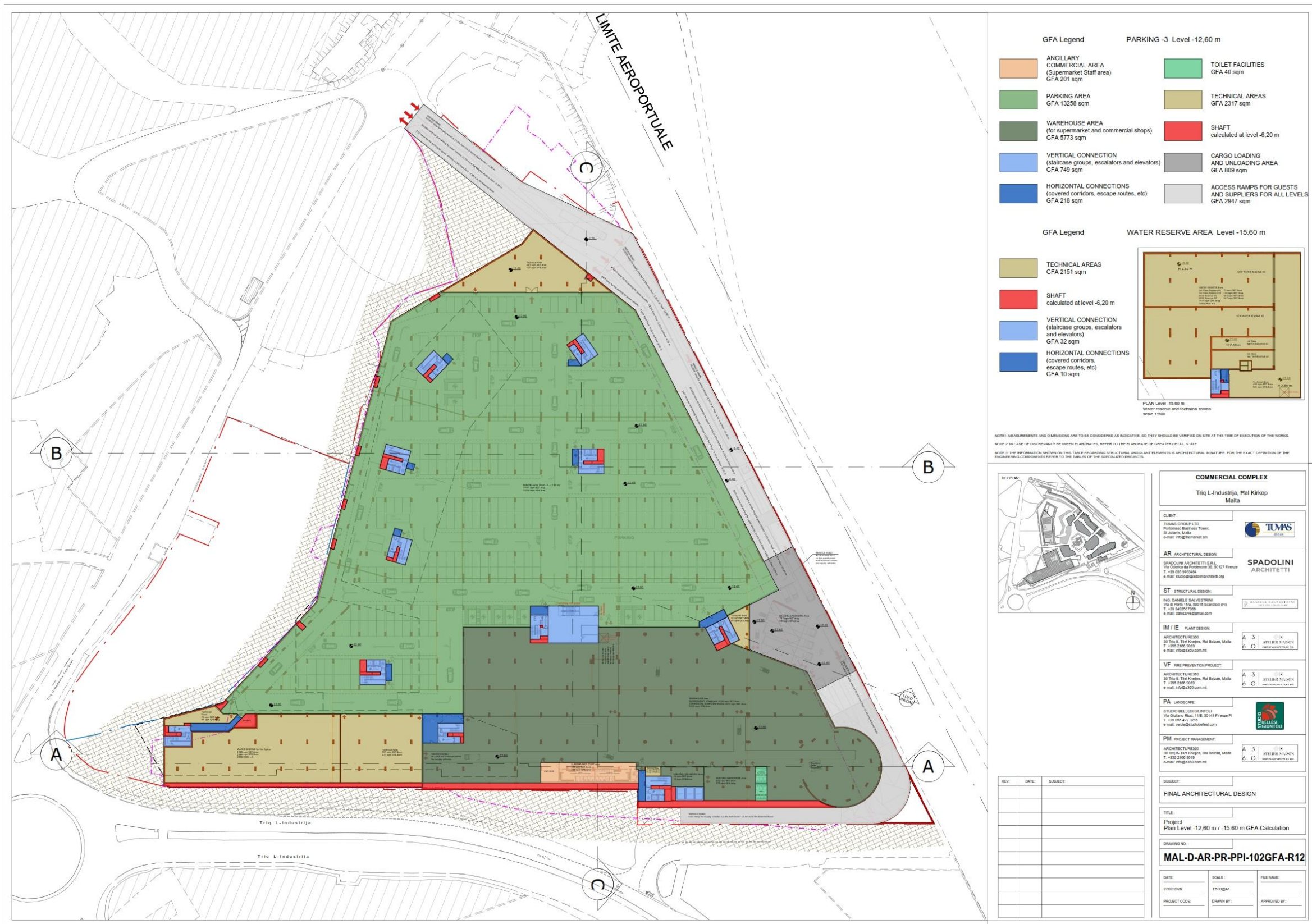
Figure 3.7: Generic Scheme Layout





Figure 3.8: Scheme Floor Plan Layouts

Level -12.6 m



Level -9.4 m



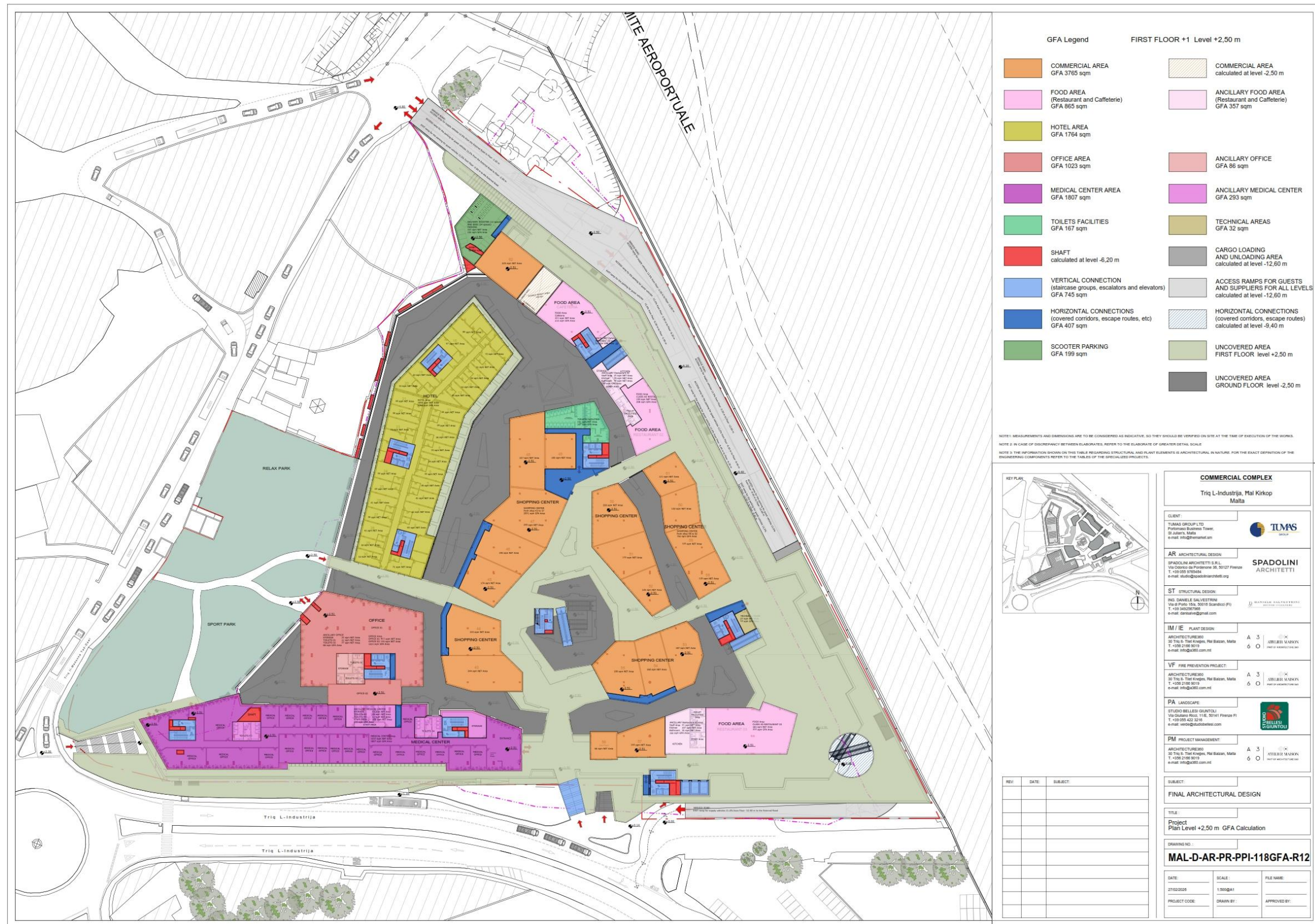
Level -6.2 m



Level -2.50 m



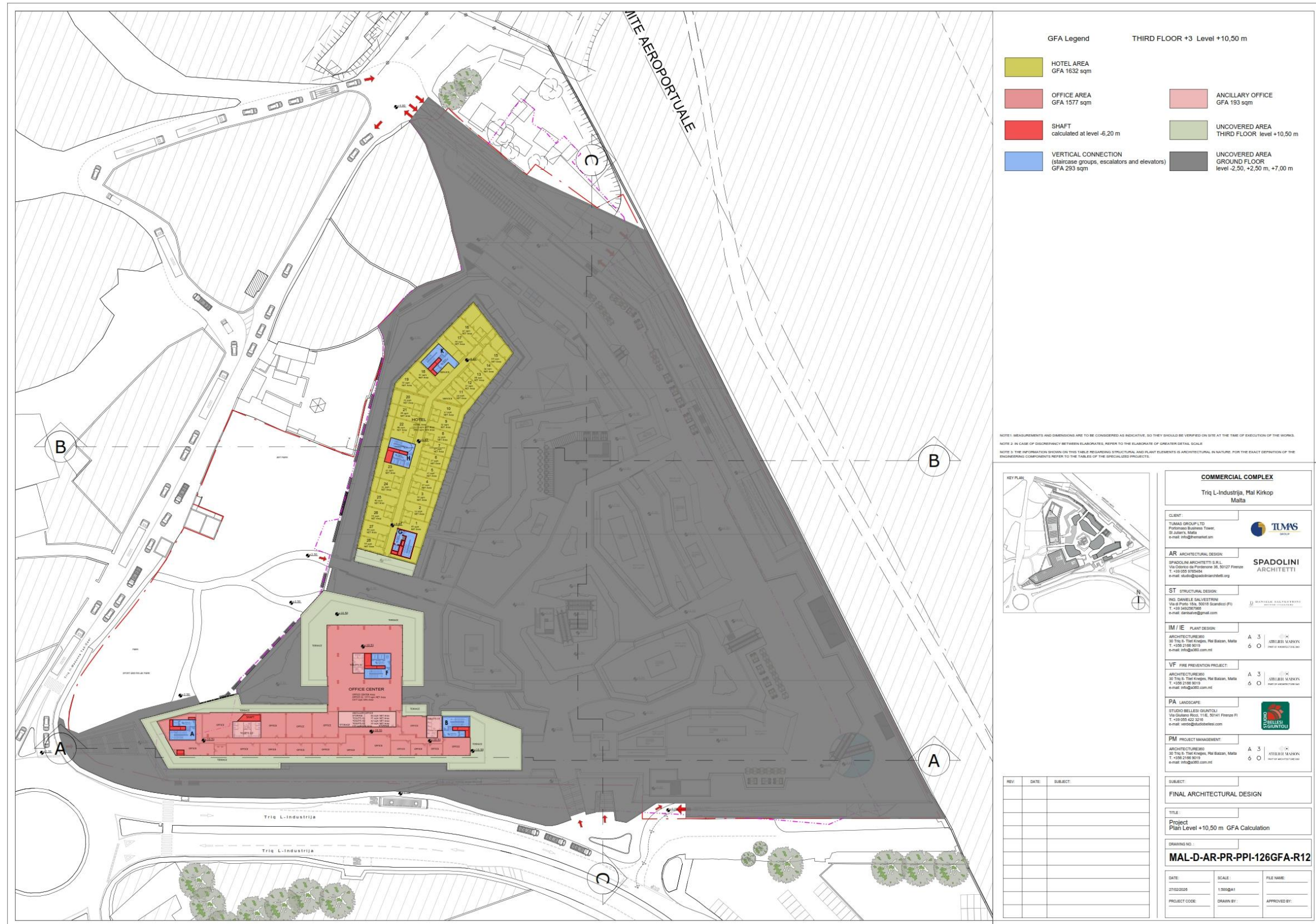
Level +2.50 m



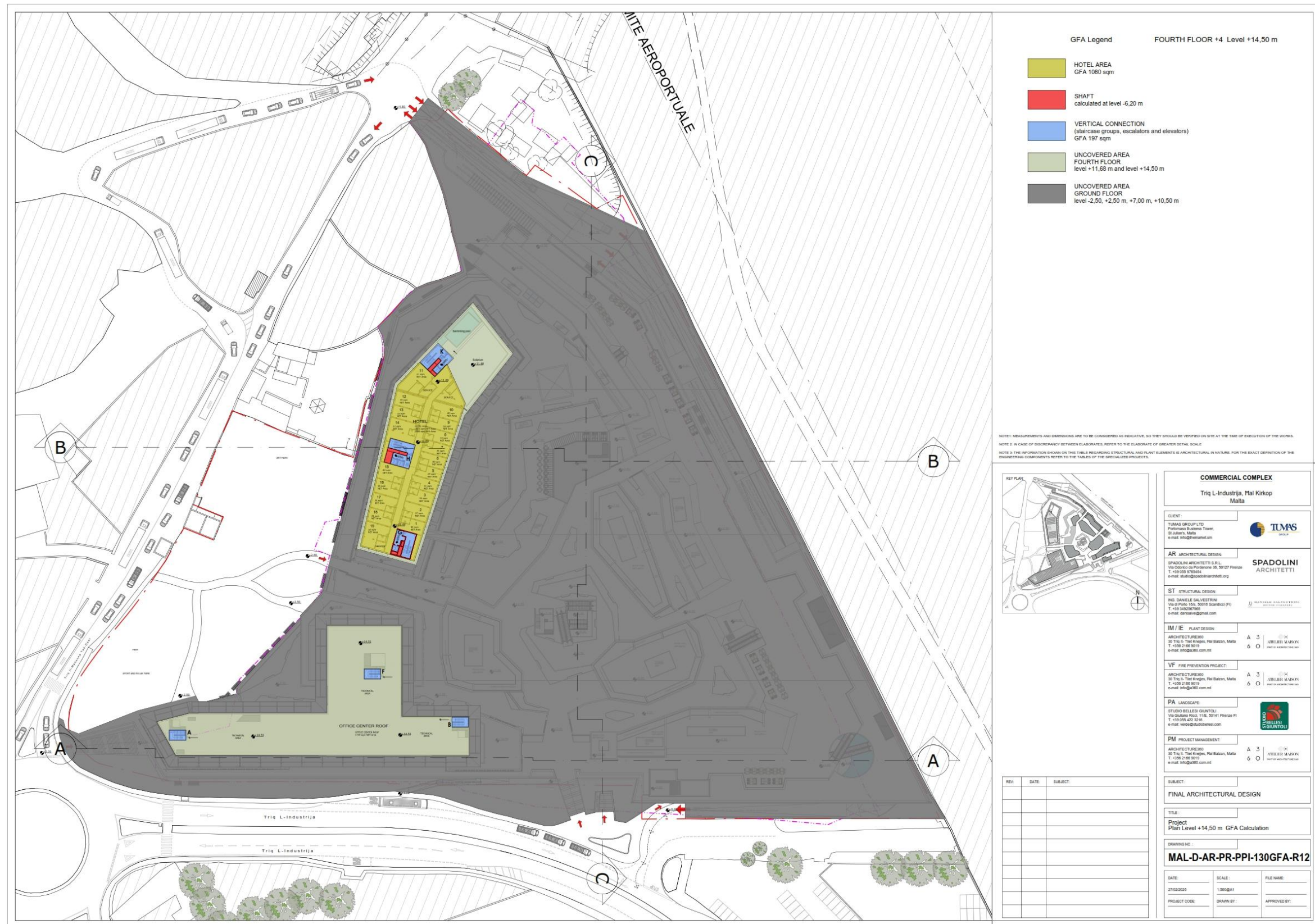
Level +7.00 m



Level +10.50 m



Level +14.50 m



Level +16.0 m

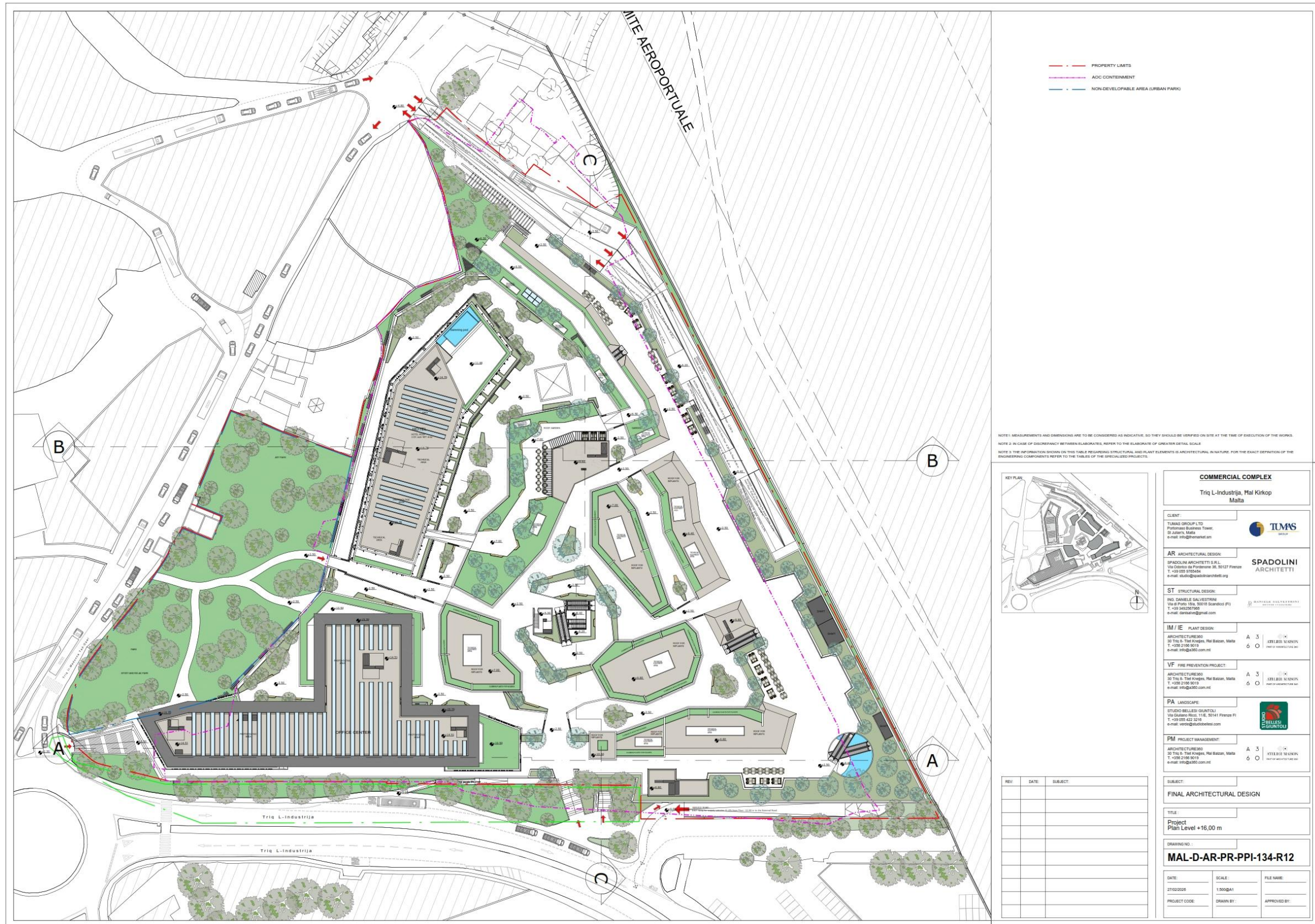
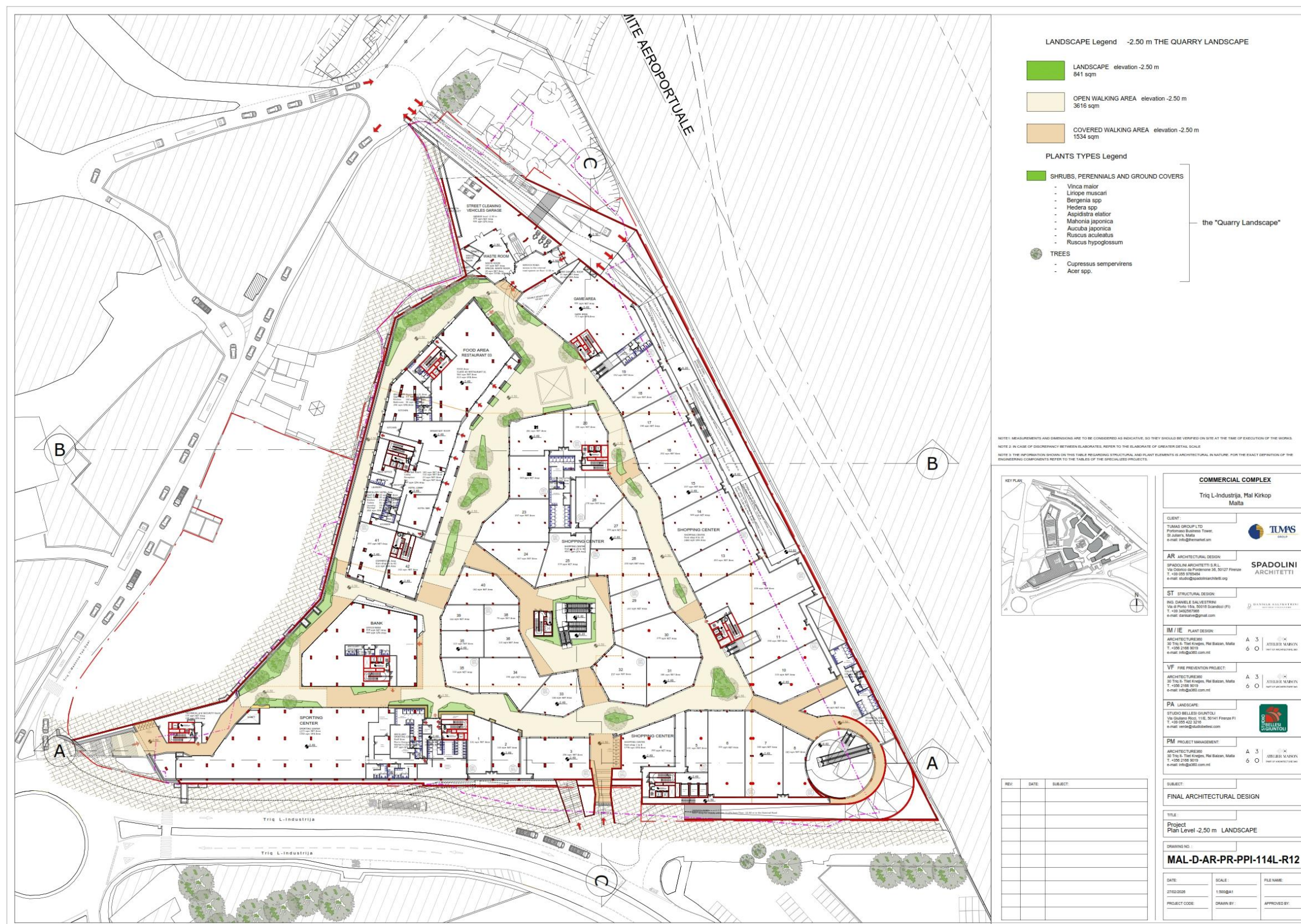


Figure 3.9: Proposed Landscaping

Level -2.5 m

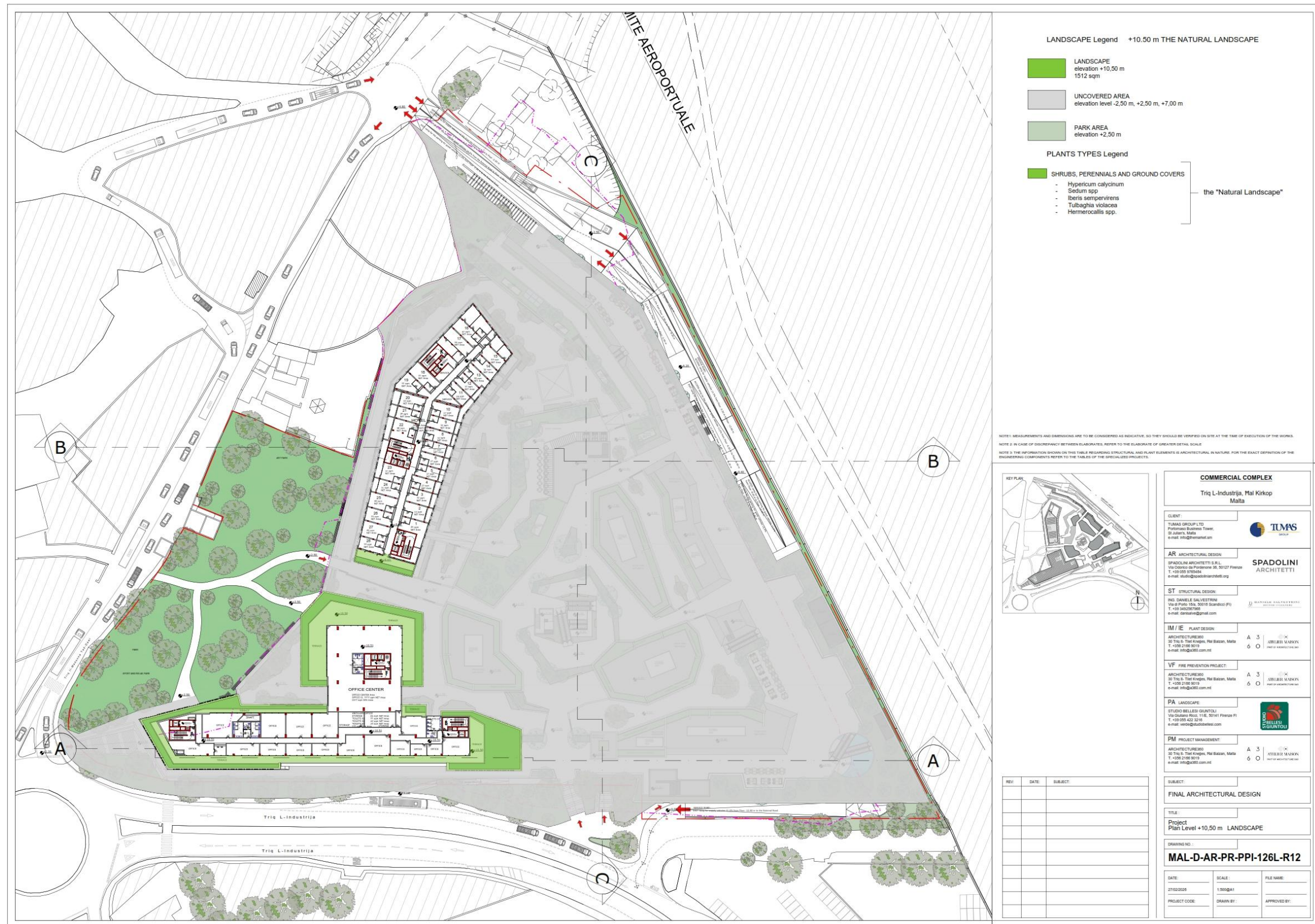




Level +7.0 m Landscaping



Level +10.5 m Landscaping



Level +14.5 m Landscaping

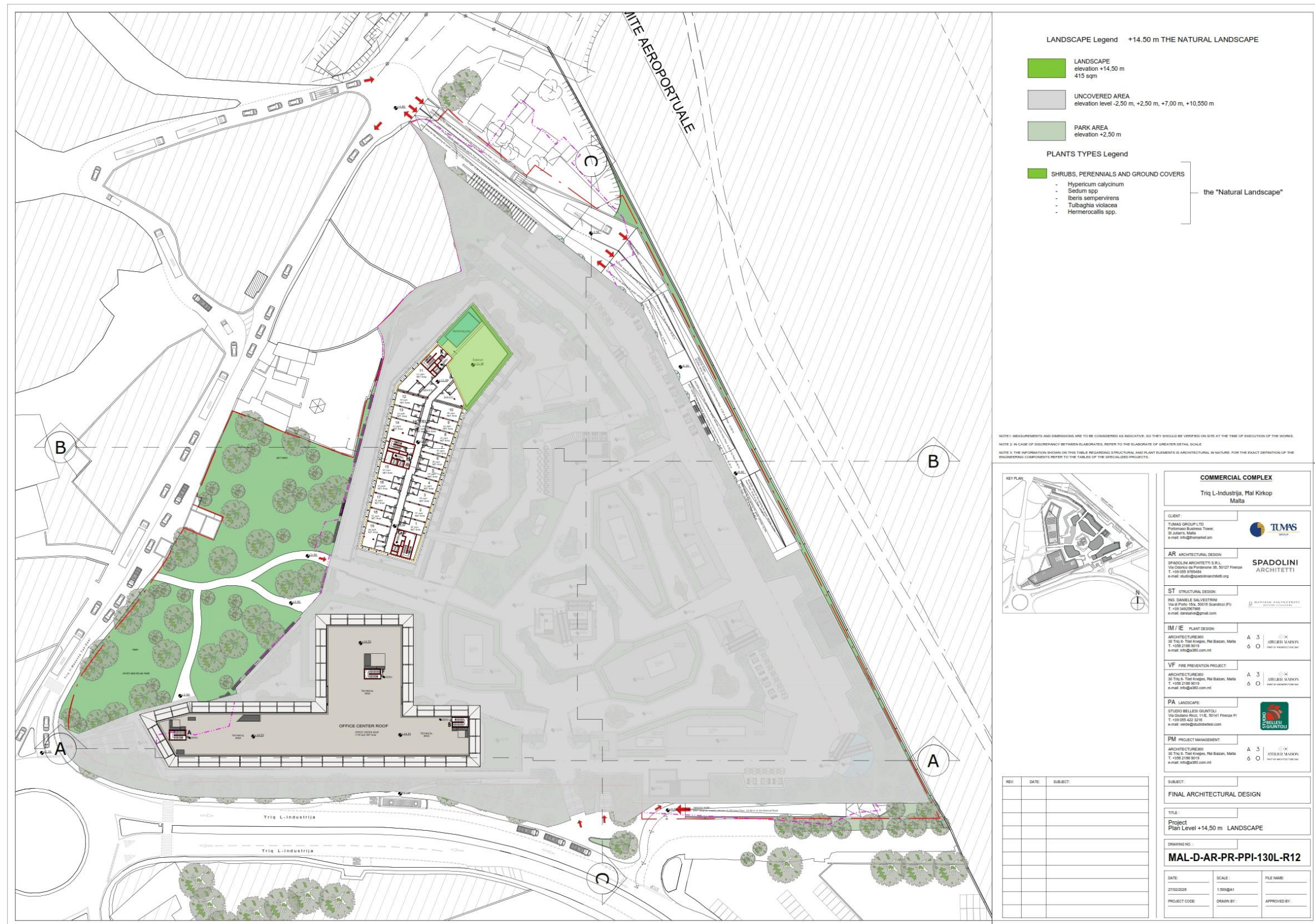


Figure 3.10: Survey of Vegetation

18 SITE ANALYSIS - VEGETATION

SPADOLINI
ARCHITETTI

SITE SPECIFIC

SITE ANALYSIS – VEGETATION
site specific

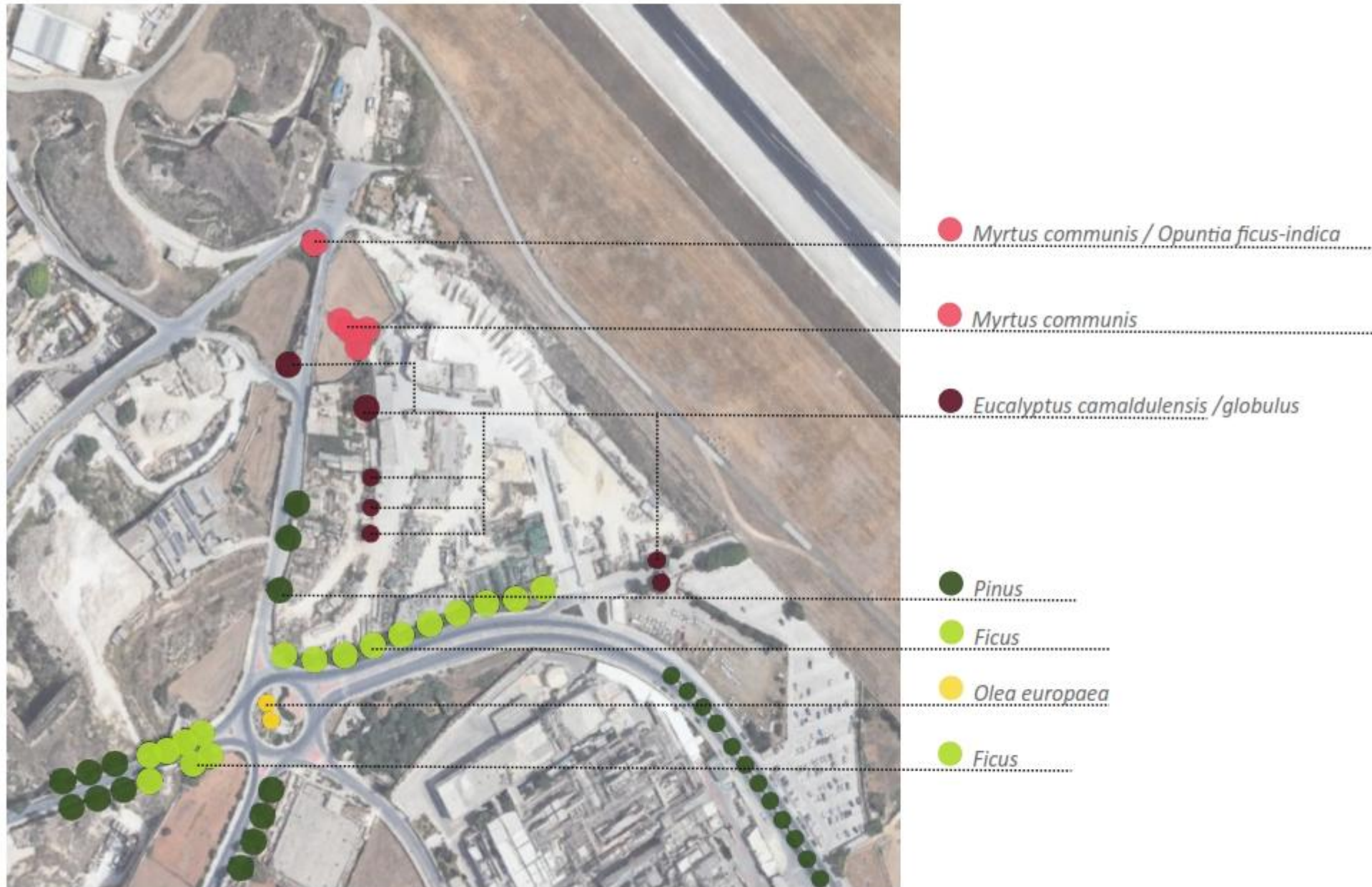
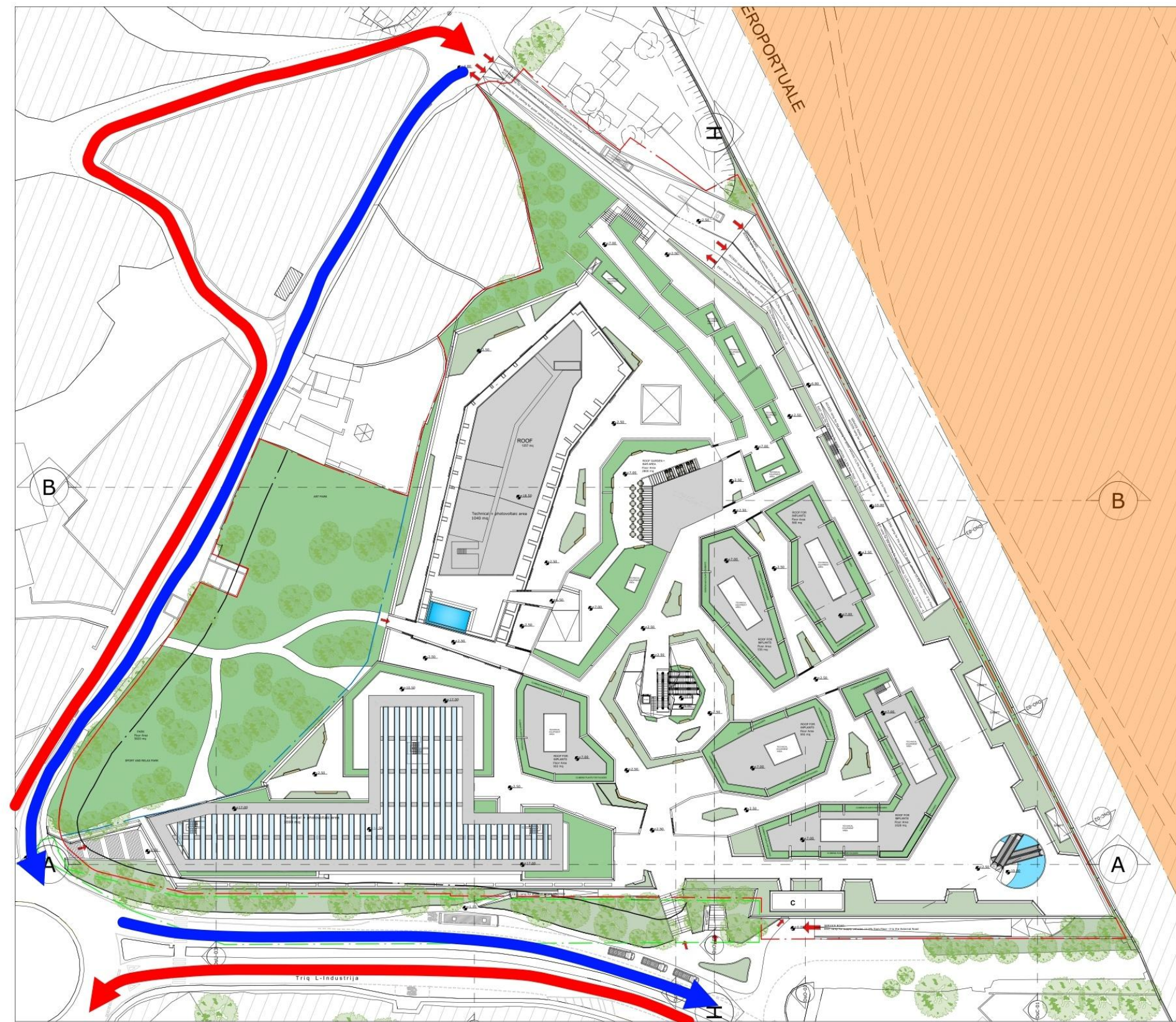
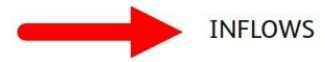


Figure 3.11: Indicative Night-time Lighting Regime



Figure 3.12: Vehicular Access Layouts

LEGEND:



LEGEND:

 EXTERNAL GOODS FLOWS

 INTERNAL GOODS FLOWS



RESOURCES

Energy

- 3.28. Discussions are underway with Enemalta on the availability of electricity supply in the vicinity; space for new sub-stations within the Scheme site have been allowed. The proposed location for the sub-stations has been identified on the plans. The PV systems to be installed will reduce the instantaneous power requirements and lower the peak demand of the Scheme.
- 3.29. The annual electricity consumption for the Scheme is estimated to be in the range of 13,700 MWh; **Table 3.2** shows the estimate breakdown for the individual elements of the Scheme.
- 3.30. The roofs of the Scheme will be utilised wherever possible to install PV modules to improve the building's overall carbon footprint. These will supplement other renewable systems such as the heat recovery air-conditioning systems. It is estimated that the roofs allow for an overall 175 kW peak system to be installed shared between the hotel roof and the office block. Having allowed for other essential items to be installed on the same roofs and having the PVs in optimal position, i.e. south facing and inclined at 30 degrees, this power generation capacity can potentially be further optimised once the development enters its more detailed design phase. Integration of PVs in south facing facades can also be considered. The PV systems are envisaged to cumulatively generate 280,000 kWh annually and will therefore generate approximately 2% of the envisaged electricity demand.

Table 3.2: Estimated Annual Electricity Consumption

Element	Annual Consumption (estimated)
Supermarket	4,000 MWh
Other commercial areas	6,000 MWh
Hotel	2,500 MWh
Aparthotel	800 MWh
Sports centre	400 MWh

- 3.31. At this stage the detailed design of the building envelop is not available, however the project engineers will be discussing with the design team the following elements:
- Façade including low-e glass and profiles having thermal breaks;
 - Insulation on all roofing to reduce thermal gain through the ceilings;
 - Solar shading devices where they can be incorporated into the design of the building itself;
 - Introduction of light wells, where possible, to integrate natural lighting; and

- Size and location of windows in order to allow the maximum possible light infiltration without the heat gains.
- 3.32. Solar incidence studies will be carried out where required in order to optimise the glazing and the possibility of having natural or hybrid ventilation in certain areas through the use of openable windows will be reviewed.
- 3.33. Once the building external fabric and outer envelope are optimised, the active building systems that consume energy will be subject to lower demands, which will result in lower sizing requirements, and lower energy consumption.
- 3.34. As indicated in the Minimum Energy Performance Directive, the main areas to be addressed include:
- Conservation of fuel and power by the adoption of energy efficient plant and equipment including but not limited to:
 - Heating equipment;
 - Hot water production;
 - Renewable energy;
 - Air conditioning equipment;
 - Ventilation systems;
 - Insulation of Piping and Ducting;
 - Type of pumps utilised;
 - Water distribution;
 - Humidity control, etc;
 - Light fittings
 - Control of heating and cooling systems including:
 - The use of automatic controls for the HVAC equipment;
 - Suitable selection of hot water production systems;
 - Avoiding the installation of oversized hot water storage systems;
 - Minimising dead lags in DHWS systems;
 - Investigation on the use of alternative sources of energy such as solar, wind and / or heat pump technology;
 - Adequate insulation for HVAC and DHWS pipe work;
 - Adequate insulation for HVAC ductwork;

- Energy monitoring and control through the installation of energy meters.
 - Control of lighting and HVAC system in non-occupied areas through presence detection will be assessed, as well as switching off lighting systems if the space is unoccupied. Specific areas such as WC's, some corridors, etc will be equipped with presence detectors in order to ensure that lights are not left on when the spaces are unoccupied.
 - Control of the various systems for optimum performance through an Intelligent Building and Energy Management System, including maintenance alarm notifications will be incorporated where these impact energy efficiency and help reduce energy consumption (example cleaning of filters on HVAC indoor units).
- 3.35. It is envisaged that the monitoring and control of the systems will be ongoing and the eventual maintenance team will be aided by the installation of relevant instrumentation and metering systems integrated in the Building Energy Management System.
- 3.36. Efficient artificial lighting systems augmented where possible by solar / daylight distribution systems and an intelligent lighting control system will be installed. The lights in the car park will be dimmable.

Water

- 3.37. The fresh water supply will be obtained from the Water Service Corporation mains passing through the roads adjacent to the property. In view of the fact that the water requirements for the Scheme will be via internal storage reservoirs, it is deemed that the effect on the WSC infrastructure in terms of increase flow rate demands will be minimal. The Scheme will be equipped with its own facility for storage of water; hence the water flow rates/capacities of the whole Scheme will not be directly transferred onto the infrastructure surrounding the development. These storages will act as a buffer, hence allowing the infill to occur at a slower rate to that of the water consumed. Moreover, sanitary fittings will be selected such that these are of the low flow type using sensor controlled aerated taps, etc. as described hereunder.
- 3.38. Effluent collection and disposal within the Scheme itself is as follows:
- White Water originating from collected rainfall. The main catchments areas are the roofs and hard paved areas surrounding the buildings. This water will be conveyed directly to a storage reservoir. This reservoir will have a number of pre-chambers to allow for the settling of any solid suspended particles. Oil interceptors will be used in areas where rainfall needs to be collected from circulation areas involving the use of vehicles. The overflow from this reservoir will be discharged externally to the building.
 - Black foul Water collected from WC's, etc. This will be discharged directly into the WSC service sewer.

- Grey water. This water will be collected from wash hand basins, showers, etc. of the hotel to be recycled for use as Second Class Water.
- 3.39. In terms of the internal water use infrastructure, it is envisaged that low flow faucets, low flow fittings, or faucet aerators will be used to reduce the water demand. Toilets will be equipped with a dual flush system and water consuming appliances, such as dishwashers and washing machines, will have a class efficiency of not less than Class A. These are in line with LEED standard requirements, which is the international green building certification the project intends to achieve.
- 3.40. The main rainwater catchments areas for the Scheme are the roofs and hardscaped areas; water will be conveyed directly to the water storage reservoir. The overflow from this reservoir will be pumped up from the basement to get discharged externally to the building.
- 3.41. In accordance with Technical Document F, the rainwater storage should be based on the formula: total roof + paved area $\times$ 0.45m⁶.
- 3.42. The building will have reservoir/s, located in the basement levels, which will be used for second-class water storage. This will be used primarily for WC flushing and irrigation.
- 3.43. The Scheme's Energy, Utility & Storm Water Management Report estimates that the anticipated maximum rainwater that can be collected is 2,092 m³. The actual second-class water reservoirs being proposed by the Scheme will have a capacity of around 2,750 m³ which is larger than the average rainfall that is estimated to be possible in the month with the highest volume of rainfall and is also larger than the 20-day second class water storage requirement as recommended.

Wastewater

- 3.44. The Scheme envisages measures to reduce the impact on the sewerage network such as grey water treatment, and diurnal storage. It is estimated that a grey water treatment system for the hotel, which is the larger producer of grey water volumes on site, will reduce inflow to the sewerage network by up to 35%. The site access floor is below the road level. Black water will mostly be stored in cesspits located on site before they are discharged. Diurnal storage and discharge during night times can be implemented to reduce the impact during the busiest hours on the network.

Raw Materials

- 3.45. The architect advises that the primary raw materials envisaged to be used in the construction of the Scheme include stone (approximately 17,000 m²), bricks (approximately 18,500 m²), and precast elements / rebar reinforcement (approximately 11,300 tonnes).

⁶ Camilleri & Cuschieri (2025). Energy, Utility & Storm Water Management Report for the Mixed-Use Commercial Village at Triq l-Industrija c/w, Triq il-Madonna Tad-Dawl, Kirkop

SCHEME CONSTRUCTION

Construction Management

- 3.46. A Construction Management Plan (CMP) has been prepared by the Applicant. The CMP covers:
- Demolition and site clearance works;
 - Oversight excavation to required formation levels, both bulk excavation and foundation levels
 - Construction of three basement parking levels;
 - Retaining walls and foundation systems;
 - Construction of hotel, retail, office, medical and sports facilities;
 - Construction of ancillary infrastructure and external works;
 - Mechanical and electrical installations;
 - Drainage and utilities infrastructure;
 - Fire detection and fire-fighting systems;
 - HVAC and air-handling installations;
 - Lift installations;
 - Façade and curtain wall systems;
 - Internal finishing and fit-out works;
 - Landscaping and irrigation works;
 - External paving and roadworks; and
 - Testing, commissioning, and certification of all systems.
- 3.47. Measures envisaged to safeguard adjacent properties include installation of wheel washing facilities, dust suppression systems, temporary drainage and runoff control measures, and protection of neighbouring third-party properties. Specific measures include regular water spraying of excavation areas and haul routes, use of water bowsers during excavation operations, covering of trucks transporting loose material, use of dust suppression systems on crushing or cutting equipment, regular sweeping and cleaning of adjacent roads, and limiting stockpile heights and covering stockpiles where necessary.
- 3.48. Construction traffic will access the site primarily through the existing access points from Triq l-Industrija and Triq il-Madonna tad-Dawl. The intention is to retain one of the batching plants found on site to produce concrete for the project only; once the

area around this plant will be excavated, the plant will be removed.

- 3.49. The construction process will commence with the installation of perimeter hoarding and controlled access gates, installation of construction signage and warning notices, establishment of temporary site offices and welfare facilities, installation of temporary utilities and services, and establishment of designated loading/unloading and storage areas.
- 3.50. Demolition and removal works will start with the demolition and dismantling of existing structures and sheds, removal of concrete hardstanding and pavements, removal of existing foundations and buried obstructions where required, removal and relocation of machinery, stockpiles and construction materials, and disconnection and diversion of existing utilities.
- 3.51. In order to accommodate the basement parking levels and the foundation works the entire site will be excavated. Excavation will start with the removal of superficial fill and made ground, and stripping and segregation of reusable material, where possible. Excavation will then proceed in controlled layers and benches and levels will be trimmed and prepared in accordance with structural and geotechnical requirements. Excavated material will be loaded directly onto trucks for removal from site. Temporary retaining structures and shoring systems will be installed where necessary and excavation faces will be monitored regularly. The architects advise that since some of the surrounding quarries are at a lower depth than the proposed excavated level, it is not being anticipated that freshwater will be reached during the excavation works. Furthermore, a licensed borehole of ca 85m depth is found within the site and thus confirms that reaching freshwater during works is highly unlikely during excavation.
- 3.52. Upon completion of the excavation works, construction works will commence in phases. The Works will generally proceed as follows:
- Stage 1 – Foundation Works including:
 - Construction of retaining walls;
 - Foundation systems and pad foundations;
 - Basement slabs and columns;
 - Underground drainage and services infrastructure;
 - Waterproofing systems.
 - Stage 2 – Construction
 - Floor slabs, beams, and columns;
 - Staircases and lift cores;
 - Roof structures.

- Stage 3 – Building Envelope
 - Façade installation;
 - Curtain walling and glazing systems;
 - Roofing systems;
 - External waterproofing works.
- Stage 4 – Mechanical and Electrical Installations
 - HVAC installations;
 - Firefighting and detection systems;
 - Plumbing and drainage systems;
 - Lift installations;
 - ICT and security systems.
- Stage 5 – External Works and Landscaping
 - Roads and paving;
 - Landscaping and irrigation systems;
 - Lighting installations;
 - Boundary treatments;
 - Parking and servicing areas.
- Stage 6 – Testing and Commissioning
 - Testing and commissioning of all systems;
 - Final inspections and certifications;
 - Removal of temporary facilities and hoarding;
 - Final cleaning and project handover.

Construction Timing

- 3.53. The estimated duration of the construction of the Scheme as a whole is envisaged to be approximately five years. It is envisaged that the demolition, site clearance, and excavation stage will take 12 months, and that the construction itself will take a further 24 months; finishing works will require another 24 months.

Construction Plant and Machinery

- 3.54. Excavation will primarily be carried out using pneumatic excavators, rippers, shovels, wheel loaders and terrain levellers, and tipper trucks. Other equipment and machinery that will be used during the various stages of the construction include tower cranes, ready-mix trucks, and concrete pumps.

Construction Personnel

- 3.55. It is envisaged that there will be approximately 60 persons employed during the entire construction period (not all of whom will be on site at any one time) – approximately 20 during the demolition / site clearance and excavation stage, approximately 40 during the construction / finishing stage.

Construction Waste

- 3.56. **Table 3.3** identifies the construction waste streams, the estimated volumes of the waste streams, and the envisaged disposal arrangements. Waste generated during construction will primarily consist of excavation waste, where the total excavation waste is estimated at approximately 337,000 m³. At this stage it is envisaged that most of the excavation material will be taken off-site and likely backfilled in a licensed quarry. It is estimated that 70-100 truck trips per day will be made during the construction period.

Table 3.3: Construction Waste Estimates

Phase	Type of Waste	EW Code	HP Code ⁷	Estimated Quantity	Final Disposal
Demolition	Stone	01 04 07 01 04 08 01 04 10 01 04 13	-	7,600 m ²	Backfilling in licensed quarry
Excavation	Rock (including gravel / torba)	01 01 02 17 05 04	-	337,000 m ³	At this stage it is envisaged that the excavated rock will be recycled as torba / backfill and / or backfilled a licensed facility
	Municipal wastes - paper and cardboard; glass; biodegradable kitchen and canteen waste	20 01 01 20 01 02 20 01 08	-	minimal	Malta North Waste Treatment Plant / Ghallis non-hazardous landfill
Construction / Finishing	Concrete (brick cut-offs)	17 01 01	-	minimal	Backfilling in licensed quarry
	Bricks / concrete / precast	17 01 02	-		Backfilling in licensed quarry
	Tiles and ceramics	17 01 03	-		Backfilling in licensed quarry
	Metal (rebar cut-offs)	17 04 05	-		Sold as scrap metal
	Plastic (packaging waste)	15 01 02	-		Malta North Waste Treatment Plant
	Municipal wastes - paper and cardboard; glass; biodegradable kitchen and canteen waste	20 01 01 20 01 02 20 01 08	-	minimal	Malta North Waste Treatment Plant

⁷ In accordance with EU Regulation 1357/2014, HP codes only apply when the waste is hazardous.

SCHEME OPERATION

Employment

- 3.57. At this stage, it is envisaged that the employment complement when the Scheme comes into operation will be in the range of 400. This is just an estimate as the exact amount would depend on the tenants.

Operational Waste

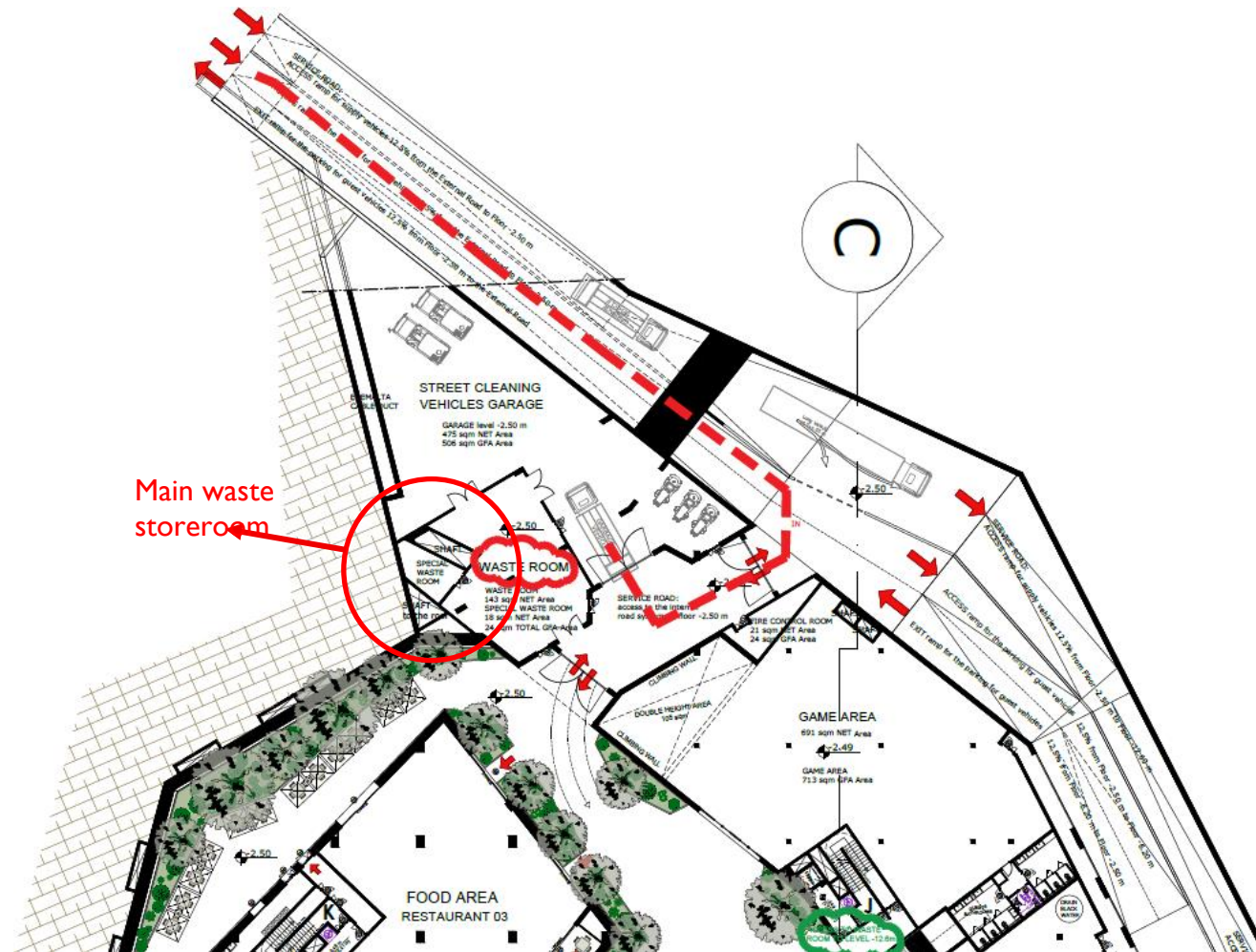
- 3.58. A Waste Management Plan has been prepared for the operational waste management of the Scheme⁸. Given the nature of the development, the operational waste streams will primarily comprise domestic and commercial waste, including recyclable waste, as well as kitchen waste (including grease trap waste) and garden waste. The domestic wastes will be segregated, temporarily stored on site, and removed off-site in accordance with all the relevant regulations, including using licensed waste carriers. Grease trap waste will also be collected by a licensed waste carrier. The medical centre would also give rise to clinical waste. Waste generation estimates are described in **Table 3.4**.
- 3.59. A waste management area is provided at ground level. There is a general garbage room of 143 m² (net area) and a special waste room of 18 m² that will be used to store clinical waste from the medical centre as shown in **Figure 3.13**. The storage, collection, and disposal of hazardous waste will be undertaken by licensed waste contractors, again in accordance with the relevant regulations. There is a service road next to the waste management area that will be used by refuse collection vehicles.
- 3.60. Eurobins of different sizes will be used for the storage of waste. Smaller bins or racks will be used to store batteries, WEEE, and maintenance waste. Waste will be removed off site on a daily basis.
- 3.61. Any hazardous waste transferred from the Scheme site will be accompanied by a valid hazardous waste consignment permit, issued by ERA. Each consignment under the consignment permit will also be accompanied by a consignment note.

⁸ Adi Associates Environmental Consultants Ltd, 2026. PA/02825/25: Development of Outlet Village, Hal Kirkop. Waste Management Plan. San Gwann, August 2026; iii + 14pp

Table 3.4: Daily operational waste generation estimates

Use	Recyclables	Mixed waste	Organic	Glass	Liquids	Hazardous
Retail	8,143 litres	5,429 litres	-	-	-	-
Supermarket	30,441 litres	15,221 litres	15,221 litres	-	-	-
Offices	461 litres	1,194 litres	149 litres	26 litres	-	-
Hotel	327 litres	1,407 litres	83 litres	64 litres	4.2 litres	-
Food and Beverage	1,002 litres	6,014 litres	3,007 litres	-	-	-
Medical Centre	-	133 litres	-	-	-	12 kg
Sporting Centre	46 litres	119 litres	15 litres	3 litres	-	-
TOTAL (daily)	40,420 litres	29,518 litres	18,475 litres	93 litres	4.2 litres	12 kg

Figure 3.13: Drawing plan showing main waste disposal area



EMISSIONS

Emissions to Air

Construction

- 3.62. The construction processes are expected to generate dust emissions (both total suspended particulates and PM₁₀), which are temporary and can also be mitigated to some extent. As mentioned, the construction period is envisaged to have an overall duration of approximately five years. It is noted that the current operation on the Scheme site generates dust.

Operation

- 3.63. Traffic emissions from the Scheme during operation are assessed in **Chapter 6** of the EIA Report.

Greenhouse Gases

- 3.64. As mentioned, the Scheme will have a total estimated annual electricity consumption of 13,700 MWh. The renewable energy generated on site will be from PVs and is estimated at 280,000 kWh. **Table 3.5** illustrates the CO₂ emissions and potential offsetting of the Scheme.

Table 3.5: CO₂ Emissions from Scheme Operations

Activity	Annual Consumption / Generation	CO ₂ emissions rate	Annual CO ₂ emissions / offsetting
Electricity consumption	13,700,000 kWh	0.389 kg/kWh ⁹	5,329,300 kg (5,329 tonnes)
Electricity generation	280,000 kWh	0.389 kg/kWh	108,920 kg (109 tonnes)

DECOMMISSIONING

- 3.65. Given that the Scheme has not been constructed yet, there are no immediate plans for its decommissioning. If and when in the future the Scheme operators decided to decommission the Scheme, the relevant authorities will be informed, and a full decommissioning plan will be prepared and submitted for approval prior to commencement of the decommissioning works. Again, the decommissioning plan will follow all local and international guidelines applicable at that time and will be carried out within an agreed timeframe.

⁹ Value based on the CO₂ per unit kWh emission factor calculated by the Enemalta for 2024 as sourced from: https://www.enemalta.com.mt/2016/02/25/fuel_mix_for_energy_distribution/ in July 2026.

4. LEGISLATION AND POLICY CONTEXT

INTRODUCTION

- 4.1. This chapter considers the relevance of international and national legislation, and Maltese planning policy, and the compatibility of the Scheme with this legislation / policy. It highlights and assesses the policies of Government Ministries, where relevant, and outlines those European Union (EU) Directives and Regulations, and other international obligations, applicable to the Scheme.
- 4.2. The legal basis for the Environment & Resources Authority's (ERA) request for the preparation of an Environmental Impact Assessment (EIA) stems from the *Environmental Impact Assessment Regulations* (as amended S.L. 549.46).

INTERNATIONAL LEGISLATION

- 4.3. International legislation relevant to the Scheme arises from International Treaties and Conventions to which Malta is a signatory, EU legislation, and local legislation transposing these.
- 4.4. The International Protocols and Conventions relevant to the Scheme include:
- *The European Cultural Convention (Paris, 19.XII.1954)*¹⁰;
 - *The European Convention on the Protection of the Archaeological Heritage (Revised) (Valletta, 16.I.1992)*¹¹;
 - *Convention on the Conservation of European Wildlife and Natural Habitats* (the Bern Convention); and
 - *Convention on the Conservation of Migratory Species of Wild Animals* (the Bonn Convention).

The European Cultural Convention

- 4.5. This Convention was adopted in Paris on the 19 December 1954 and entered into force on 5 May 1955. The objective of the Convention is to develop mutual understanding among the peoples of Europe and reciprocal appreciation of their cultural diversity, to safeguard European culture, to promote national contributions to Europe's common cultural heritage respecting the same fundamental values and to encourage in particular the study of the languages, history, and civilisation of the Parties to the Convention.
- 4.6. The Convention requires the Contracting Parties to “regard the objects of European cultural value placed under its control as integral parts of the common cultural heritage of

¹⁰ <http://conventions.coe.int/Treaty/en/Treaties/Word/018.doc>

¹¹ <http://conventions.coe.int/Treaty/en/Treaties/Word/143.doc>

Europe”, and “shall take appropriate measures to safeguard them and shall ensure reasonable access thereto”.

The European Convention on the Protection of the Archaeological Heritage (Revised)

- 4.7. This Convention, which was agreed in Valletta on 16 January 1992, amends the original Convention (agreed in London in 1969) on the protection of archaeological heritage. The aim of this (revised) Convention is “*to protect the archaeological heritage as a source of the European collective memory and as an instrument for historical and scientific study*”. This revision was brought about through the acknowledgement that European archaeological heritage is under serious threat from deterioration as a result of “*major planning schemes, natural risks, clandestine and unscientific excavations, and insufficient public awareness*”. In the context of the Convention, archaeological heritage includes “*structures, constructions, groups of buildings, developed sites, moveable objects, monuments of other kinds as well as their context, whether situated on land or under water*”.
- 4.8. The Convention requires the Contracting Parties to institute a legal system for the protection of archaeological heritage, including:
- The creation and maintenance of a heritage inventory;
 - The creation of archaeological reserves; and
 - Mandatory Reporting to competent authorities of the chance discovery of archaeological material.
- 4.9. The Convention also requires the Parties to apply procedures for the authorisation and supervision of excavations and other archaeological activities to ensure that they are undertaken by qualified persons and in a scientific manner.
- 4.10. Other provisions of the Convention include:
- The physical protection of archaeological heritage;
 - Integrated conservation of the archaeological heritage (including through reconciliation with development plans and other planning processes);
 - Resourcing rescue archaeology;
 - Collection and dissemination of scientific information;
 - Public awareness; and
 - Prevention of illicit circulation of elements of archaeological heritage.
- 4.11. Malta ratified this Convention on 24 November 1994, and it entered into force on 25 May 1995. The provisions of this Convention have been transposed into local legislation by the Cultural Heritage Act of 2002 (see below).

Implications for the Scheme:

- There are no scheduled cultural heritage features within the Scheme site; **Chapter 7** of this EIA Report describes the impact of the Scheme in respect of cultural heritage. The impacts on cultural heritage are considered to be of no significance to minor significance, depending on the feature and the management of the construction. There is the potential for impacts on unrecorded archaeological artefacts during the excavation to be carried out on the site; the extent of this impact is uncertain, as it will depend on whether artefacts are present, their importance, and the extent of any loss or damage.

EUROPEAN POLICY AND LEGISLATION

- 4.12. The Treaty on the Functioning of the European Union (Article 191) provides that members should pursue the preservation, protection and improvement of the quality of the environment, aim at a high level of environmental protection and apply policies “...based on the precautionary principle and on the principles that preventive action should be taken, that environmental damage should as a priority be rectified at source”.¹²
- 4.13. The relevant EU Directives include Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment, as amended by Directive 2014/52/EU, which has been transposed by the Maltese *Environmental Impact Assessment Regulations* (as amended S.L. 549.46).
- 4.14. Since the European Union’s environment acquis has been transposed into national legislation, the Directives *per se* will not be assessed and instead the national legislation transposing the Directives is assessed below.

¹² Article 191 (ex Article 174 of the Treaty establishing the European Community):

1. Union policy on the environment shall contribute to pursuit of the following objectives:

- Preserving, protecting and improving the quality of the environment;
- Protecting human health;
- Prudent and rational utilisation of natural resources;
- Promoting measures at international level to deal with regional or worldwide environmental problems, and in particular combating climate change.

2. Union policy on the environment shall aim at a high level of protection taking into account the diversity of situations in the various regions of the Union. It shall be based on the precautionary principle and on the principles that preventive action should be taken, that environmental damage should as a priority be rectified at source and that the polluter should pay.

In this context, harmonisation measures answering environmental protection requirements shall include, where appropriate, a safeguard clause allowing Member States to take provisional measures, for non-economic environmental reasons, subject to a procedure of inspection by the Union.

NATIONAL LEGISLATION

The Constitution of Malta

Declaration of Principles

- 4.15. The Constitution of Malta (Section 9) declares that the State shall safeguard the landscape and the historical and artistic patrimony of the Nation. These are the only aspects of the environment referred to in the Constitution, underlining the importance of the landscape and historical heritage.
- 4.16. Local legislation relevant to the Scheme is described in the following sections.

Environment Protection Act 2016 (Act I of 2016)

- 4.17. The former Environment and Development Planning Act, 2010 which consolidated the provisions of the Development Planning Act 1992 (as amended) and the Environment Protection Act 2001, has been replaced by the Environment Protection Act and the Development Act.
- 4.18. The Act stipulates that *“It shall be the duty of every person and entity, whether public or private, to protect the environment and to assist in the taking of preventive and remedial measures to protect the environment and manage natural resources in a sustainable manner”*.
- 4.19. Various duties fall to the Government. Those relevant to the Scheme are:
- “4(a) to manage the environment in a sustainable manner by integrating and giving due consideration to environmental concerns in decisions and policies on land use, socioeconomic, educational and other matters;*
 - 4(b) to take such preventive and remedial measures as may be necessary to address and abate the problem of pollution and any other form of environmental degradation in Malta and beyond, in accordance with the polluter pays principle and the precautionary principle;*
 - 4(e) to apply scientific and technical knowledge and resources in determining matters that affect the environment;*
 - 4(f) to ensure the sustainable management of wastes, to promote the reduction of waste and the proper use, reuse and recovery of matter;*
 - 4(g) to safeguard biological diversity;*
 - 4(h) to combat all forms of pollution and environmental degradation;*
 - 4(i) to consider the environment as the common heritage and common concern of mankind; and*
 - 4(j) to provide incentives leading to a higher level of environmental*

protection”.

- 4.20. The Act makes provision for the establishment of an authority to implement the duties of Government under the Act – the Environment and Resources Authority (ERA). ERA’s principal duties include:
- to perform and succeed in the functions, assets, rights, liabilities and obligations of the competent authority established under the provisions of article 6 of the Environment and Development Planning Act and under the provisions of article 3 of the Malta Resources Authority Act in so far as such functions, assets, rights, liabilities and obligations refer to the role of the competent authority established under the said Act in relation to the protection and management of the environment and sustainable management of natural resources, and the prevention, mitigation, offsetting or remediation of adverse effects on the environment;
 - to formulate and implement policies relating to the protection and management of the environment and the sustainable management of natural resources;
 - to carry out and or commission surveys, studies, assessments, investigations, audits, monitoring and promote research on any matter relating to the environment and the natural resources;
 - to provide information and issue guidelines to the public and to commercial and other entities on matters relating to the environment and natural resources;
 - to establish measures for the protection of the environment and to promote the efficient use of natural resources;
 - to ensure that national and international obligations relative to the matters regulated by or under the Act are entered into force and complied with;
 - to permit, assess, investigate, audit, monitor, and take action on, any activity, intervention, project, operation or land use that may have an effect on the environment;
 - to advise the Minister on international legislation and on the formulation of national policy; and
 - to carry out, review or request others to carry out environmental assessments, environmental audits and environmental monitoring of activities and works having an impact on the environment.

Development Planning Act, 2016 (Act VII of 2016)

- 4.21. The Development Planning Act (DPA) establishes the Planning Authority. According to the Act the role of the Planning Authority is:

(a) to perform and succeed in the functions which were previously assigned to the Malta Environment and Planning Authority under the provisions of the

Environment and Development Planning Act and are now contained in this Act and to perform and succeed in the assets, rights, liabilities and obligations of the Malta Environment and Planning Authority established under the provisions of the Environment and Development Planning Act to the extent that the Minister may prescribe by regulations under this Act;

(b) the functions of the Executive Council and the Planning Board listed under articles 38 and 64;

(c) to facilitate and coordinate the permit granting process for projects of common interest;

(d) to perform and succeed in the functions which were previously assigned to the Building Regulation Board and the Building Regulation Office under the provisions of the Building Regulation Act and which are now contained in this Act and to perform and succeed in the assets, rights, liabilities and obligations of the Building Regulation Board and the Building Regulation Office established under the provisions of the Building Regulation Act to the extent that the Minister may prescribe by regulations under this Act; and

(e) the performance of any other functions as may from time to time be assigned to it by the Minister, including the functions required to give effect to any international obligation entered into by Malta relative to matters regulated by this Act.

4.22. The Act details the various activities to be carried out by the Planning Authority. With respect to development permits applications Regulation 71 of the Act requires that:

(1) Any person, including a department of government or body corporate established by law, wishing to carry out any development referred to in article 70, shall apply to the Planning Board for such permission, in such manner, on such form and giving such information as the Planning Board may prescribe.

(2) The Planning Board may grant three types of development permissions:

(a) an outline development permission which gives approval in principle to the proposed development, but specifies reserved matters which need to be included in a full development permit application or applications. A period of time shall be stated within which the full development permit application or applications shall be submitted, failure of which would render the outline development permit null. Such period shall in no case exceed five years. No development may commence without a full development permit;

(b) a full development permission is required before any development can commence, whether or not preceded by an outline development permission. The full development permission will be given subject to conditions included in the permission;

(c) a non-executable full development permission which approves the development but imposes conditions to be adhered to before a full development permission is issued.

(3) Any person may also apply to the Planning Board for a determination as to whether a proposal requires a development permission and the Planning Board is bound to inform that person whether a development permission or any other form of notification is required in terms of this Act or not.

Climate Action Act (Cap. 543)

- 4.23. The Climate Action Act (Cap. 543) establishes the legal framework for Malta's climate governance and provides the basis for achieving national and European Union climate objectives. The Act requires the integration of climate change mitigation and adaptation considerations into Government policies, plans and decision-making processes, while promoting sustainable development and the transition towards a low-carbon and climate-resilient economy. It also provides for the preparation and implementation of national climate action strategies and adaptation measures, establishes governance arrangements for monitoring progress, and supports Malta's obligations under EU climate legislation and international agreements, including the Paris Agreement.

Implications for the Scheme:

- Measures to improve energy efficiency, maximise the use of renewable energy, reduce greenhouse gas emissions where practicable, and enhance resilience to the potential effects of climate change are described in **Chapter 3** of this EIA Report.

Construction Management Site Regulations

- 4.24. The aim of the Construction Management Site Regulations, as amended (S.L. 623.08) is to limit environmental degradation through construction management practices that cause least nuisance to neighbours, minimise risk to workers, and safeguard private and public property.
- 4.25. The Regulations apply “...to any works which are not exempt under the Sixth Schedule and as may be brought into force by the Minister in part or in whole and ancillary activities on site”.
- 4.26. The Schedules within the Regulations provide requirements for reducing nuisance to neighbours through:
- Erection of a site notice containing details of the owner, site manager, architect and contractor;
 - Conditions for cutting of stone and bricks on site;
 - Transportation of loose material;
 - Obstruction of pavements;

- Hazards to vehicular traffic;
 - Cleaning of the site and its immediate vicinity;
 - Rodent control;
 - Hoardings around development sites;
 - Covered ways and barricades;
 - Safe passage past the site;
 - Nuisance abatement, including construction times; and
 - Control of dust emissions.
- 4.27. Technical guidelines and specifications are also provided for minimisation of noise and vibration levels; health and hygiene, including waste management; hazardous materials handling; and point source pollution from storm water.
- 4.28. The Regulations apply to any construction site, except where the Minister has exempted such development under the provisions of the Sixth Schedule.

Implications for the Scheme:

- Regard has been given to the requirements of the Regulations in addressing the construction impacts of the Scheme. An explanation of construction management is included in **Chapter 3** of this EIA Report. Relevant mitigation measures have been included in specific chapters of the EIA Report. The construction of the Scheme will fall under the remit of these Regulations.

Construction and Demolition Waste Framework Regulations

- 4.29. The aim of the Construction and Demolition Framework Regulations (S.L. 549.161) is to establish a framework regulating the management of waste resulting from demolition, excavation and construction activities.
- 4.30. From 1 January 2026, any major application or application for high-density residential developments serving sixteen or more units, must include the submission of a pre-demolition audit prior to the issuance of the commencement notice of works. The pre-demolition audit must contain the information included in Schedule I of the Regulations.
- 4.31. By not later than 1 January 2028, any developer submitting an application with the Planning Authority for a major development or high-density residential development serving sixteen or more units must take the necessary measures to ensure that the following targets are achieved for each development:
- (a) a minimum of forty percent of excavated material must be re-used or recycled;

- (b) a minimum of forty percent by weight of non-hazardous waste generated during demolition activities must be prepared for re-use, recycled and, or other forms of material recovery excluding backfilling operations;
- (c) a minimum of fifteen percent of construction material including that used in finishes must be made up of re-used or recycled material; and
- (d) a minimum of twenty-five percent of the granular material used for construction must be made up of recycled aggregates. The percentage share of recycled aggregates used must contribute towards attaining the fifteen percent target for re-use and recycled materials as listed in (c).

Implications for the Scheme:

- These requirements may not be directly applicable to the Scheme as a Planning Application has already been submitted for the development. However, where possible, recycling and reuse should be considered in the construction process.

Prevention and Remedying of Environmental Damage Regulations

- 4.32. The Prevention and Remedying of Environmental Damage Regulations (S.L. 549.97) establish a framework for environmental liability based on the **polluter pays principle**, with the objective of preventing and remedying environmental damage. The Regulations apply to damage affecting protected species and natural habitats, water, and land where contamination creates a significant risk to human health. Operators whose activities pose an imminent threat of environmental damage are required to take preventive measures without delay, while those responsible for environmental damage must undertake the necessary remedial actions to restore the environment to its baseline condition. The Regulations also empower the Environment & Resources Authority (ERA) to require operators to prevent, assess and remediate environmental damage and recover the associated costs from the responsible party.

Implications for the Scheme:

- Given the location of the Scheme and its nature it is unlikely that there is a risk of environmental damage. Any unforeseen environmental damage arising from the Scheme would be addressed in accordance with the requirements of the Regulations.

Legal Notices

- 4.33. The Regulations in force under the Environment Protection Act and the Development Planning Act include the following Legal Notices that are relevant to the Scheme:

Waste Management

- **Legal Notice 106 of 2007:** *Waste Management (Activity Registration) Regulations*, (S.L.549.45) and **Legal Notice 184 of 2011:** *The Waste Regulations* (as amended,

S.L.504.37). These Regulations regulate the production and disposal of hazardous and non-hazardous wastes. The Regulations aim to control all operations relating to the production and management of waste and promote sound waste management practices so as to safeguard human health and the environment.

- **Legal Notice 277 of 2006:** *Waste Management (Packaging and Packaging Waste) Regulations* (as amended, S.L.549.43). These Regulations aim to reduce the amounts of packaging waste disposed, including through the use of recycling.

Implications for the Scheme:

- Waste management issues related to the construction and operation of the Scheme are discussed in **Chapter 3** of this EIA Report. The Construction Management Plan (CMP) that has been prepared addresses waste management issues during construction. A Waste Management Plan for the operation has been requested by the Planning Authority and has been prepared by Adi Associates as also described in **Chapter 3**.

Water

- **Legal Notice 194 of 2004:** *Water Policy Framework Regulations* (as amended, S.L.423.20). These Regulations are issued under both the Environment Protection Act and the Malta Resources Authority Act. They establish a framework for the protection of coastal waters as well as inland surface waters, transitional waters and groundwater. The framework is intended to prevent further deterioration, and to protect, enhance, and restore the status of aquatic systems.

Implications for the Scheme:

- The impact of the Scheme in respect of ground water quality is described in **Chapter 5** of this EIA Report. The impact on ground and surface water quality is considered to be of no significance to minor negative significance, subject to the appropriate mitigation measures being in place to avoid the potential contamination of the ground water.

Air Quality

- **Legal Notice 291 of 2002:** *National Emission Ceilings for Certain Atmospheric Pollutants Regulations* (as amended, S.L.549.32). The Regulations stipulate that Malta must limit emissions of certain pollutants including NO_x and volatile organic compounds (VOC). It is the responsibility of ERA to ensure that the thresholds laid down in the Regulations are not exceeded.
- **Legal Notice 478 of 2010:** *Ambient Air Quality Regulations* (as amended, S.L.549.59). These Regulations lay down measures aimed at defining and establishing objectives for ambient air quality designed to avoid, prevent or reduce harmful effects on human health and the environment as a whole; and assessing the ambient air quality in Malta on the basis of specified methods and criteria.

Implications for the Scheme:

- Of relevance to the Scheme are traffic emissions as a result of the Scheme when it comes into operation. The Scheme will attract additional traffic when it comes into operation, and this will result in increased road traffic emissions, primarily of NO₂ and PM₁₀. An air quality assessment is found in **Chapter 6** of this EIA Report: it assesses the impact of the Scheme on sensitive receptors around the Scheme site. It is also noted that while construction of the Scheme will generate dust emissions, the current uses at the Scheme Site generate significant dust emissions, which will obviously halt once the Scheme is operational.

Biodiversity

- **Legal Notice 258 of 2018:** Trees and Woodlands Protection Regulations (S.L. 549.123). The objectives of these regulations are to protect trees and woodlands in the Maltese Islands, safeguard them, and to regulate the activities that may have an effect thereon.

Implications for the Scheme:

- There are no protected trees within the Scheme Site. As described in **Chapter 3** the trees on the boundary of the Scheme site will be retained.
- **Legal Notice 116 of 2005:** *Freedom of Access to Information on the Environment Regulations* (as amended, S.L.504.65). These Regulations ensure freedom of access to and the dissemination of information held by public authorities on the environment.

Implications for the Scheme:

- The EIA Report and its supporting documents fall under this Legal Notice and are to be made public.

Malta Resources Authority Act 2001

- 4.34. The Malta Resources Authority Act established the Malta Resources Authority (MRA) and assigns it a number of functions in relation to the regulation of the water, minerals, and energy sector. The Minister responsible for resources may, among others, also make regulations for the granting, renewal, transfer, suspensions, and cancellation of licences, permits, or other authorisations.
- 4.35. The regulations currently in force under the Malta Resources Authority Act that are relevant to the Scheme include the Legal Notices listed hereunder:

Water

- **Legal Notice 17 of 2009:** *Water intended for Human Consumption Regulations* (as amended, S.L.449.57). The Regulations aim to protect human health through the provision of water that is wholesome and clean and to set in place a regime that provides protection to persons consuming the water. They apply to any water supplied by a water supplier.

Implications for the Scheme:

- The Scheme has been designed taking account of the need to ensure against the contamination of water, including water intended for human consumption, as described in **Chapter 3** of the EIA Report. The impact on ground and surface water quality is considered to be of minor to no significance, subject to the appropriate mitigation measures being in place to avoid the potential contamination of the ground water.
- **Legal Notice 139 of 2002: Sewer Discharge Control Regulations** (as amended, S.L.423.15). The Regulations control the discharge of effluents to the sewerage system and prohibit the discharge of effluents containing substances listed in Schedule A of the Regulations.

Implications for the Scheme:

- As described in **Chapter 3** of this EIA Report, sewage from the Scheme will be discharged to the sewerage network.
- **Legal Notice 108 of 2009: The Protection of Groundwater against Pollution and Deterioration Regulations** (as amended, S.L.423.36). These Regulations aim to protect groundwater against pollution and deterioration.

Implications for the Scheme:

- The impact of the Scheme in respect of groundwater quality is described in **Chapter 5** of the EIA Report. The impact on ground water quality is considered to be of no significance, subject to the appropriate mitigation measures being in place to avoid the potential contamination of the ground water.

Other

- **Legal Notice 538 of 2010: Promotion of Energy from Renewable Sources Regulations** (S.L.545.11). The Regulations seek to increase the share of energy from renewable sources.

Implications for the Scheme:

- As described in **Chapter 3** the roofs of the Scheme will be utilised wherever possible to install PV modules to improve the building's overall carbon footprint. These will supplement other renewable systems such as the heat recovery air-conditioning systems. The PV systems are envisaged to cumulatively generate 280,000 kWh annually and will therefore generate approximately 2% of the envisaged electricity demand.

Fertile Soil (Preservation) Act

- 4.36. This Act (Act XXIX of 1973) requires that, before undertaking excavations, the Director of Agriculture must be informed to ensure that the soil is removed and is deposited in a manner approved by the Director. Further details governing the

transport and reuse of soil are included in the *Preservation of Fertile Soils Regulations (Legal Notice 104 of 1973, S.L. 236.02)* issued under this Act.

Implications for the Scheme:

- Any soil that is found on the Scheme site will be retained and reused in the Scheme's landscaping. Any transport of soil from the site for temporary storage elsewhere will require a permit from the Directorate of Agriculture. It is also recommended that the removal of the soil be conducted when the soil is dry, so as not to affect its structure.

Long Term Waste Management Plan 2021-2030

- 4.37. The Waste Management Plan discusses legislation relevant to waste management in the Maltese Islands. It presents a detailed picture of the waste arisings and includes a strategy in relation to all waste streams, with the objective of moving waste management in Malta up the waste hierarchy through increased prevention of waste, re-use, recycling, and recovery.
- 4.38. The strategic objectives of the Plan are to:
- Maximise the resource value in waste through different management options;
 - Innovate by designing waste prevention initiatives to lower Malta's per capita generation rate;
 - Reform the collection system to increase economies of scale, harmonise collection practices, and modernise the collection fleet;
 - Build the necessary waste management facilities to treat recyclable, organic, and residual waste to achieve Malta's targets;
 - Study the feasibility of an enhanced producer responsibility framework to complement Malta's transition to a circular economy and reflect further on the true cost of waste management; and
 - Promote further the involvement of the private sector in waste management.
- 4.39. The Waste Management Plan sets out a number of key priority areas that are aligned with the strategic objectives. In bridging the gap between Malta's current performance and the 2030 waste targets, a suite of measures is outlined in the Plan, structured as follows:
- **Waste Prevention as a Priority:** The overall aim is to promote resource efficiency and entice waste generators to minimize their waste arisings through the incentivisation of greener business processes and prompt societal change towards smarter consumption patterns.
 - **Waste Collection Reform:** For waste, which is unpreventable, efficient collection systems must be in place. Measures include the collection frequencies of different

waste streams to encourage source separation and the minimization of residual waste as well as a regionalised approach to waste collection.

- **Waste Management and Resource Optimisation:** In order to support Malta's transition to a more resource efficient and circular economy a number of measures for the treatment of waste including improving existing extended producer responsibility frameworks to establish a level playing field; implementing measures to incentivise waste prevention, harness source separation and reduce residual waste volumes from commercial entities; and investing in both new and existing waste management facilities.
- 4.40. In order to support the implementation of these initiatives, the Plan also puts forward a series of improvements to the monitoring, compliance and data management capabilities, largely based on strengthening capacity building.
- The Scheme will operate in accordance with the regulations listed above.

Protection of Antiquities Regulations, 1932

- 4.41. Originally issued under the Antiquities (Protection) Act¹³ of 1925, these Protection of Antiquities Regulations (as amended, S.L.445.01) apply to monuments and other objects, whether movable or immovable, having a geological, palaeontological, archaeological, antiquarian or artistic importance that have been in Malta for at least 50 years. The Regulations afford protection to buildings or sites of such importance, ensuring that they are not demolished or altered without the permission of the Minister responsible for Culture. The Regulations include a list of properties, sites and features that qualify for protection under the Act.

Cultural Heritage Act, 2002

- 4.42. The Cultural Heritage Act provides overall protection to “...all movable or immovable objects of artistic, architectural, historical, archaeological, ethnographic, palaeontological, and geological importance...” and includes information and data relative to cultural heritage in Malta. It also includes “...archaeological, palaeontological or geological sites and deposits, landscapes, groups of buildings...which have an historical value”.
- 4.43. The Act also controls interventions that may be made on cultural property, all of which require a permit from the Superintendent of Cultural Heritage and are subject to tests, examinations or investigations. Furthermore, archaeological or palaeontological excavations, or explorations on land, as well as in the territorial waters, or in the contiguous zone of Malta, can only be made by the Superintendent, or with written permission of the Superintendent (Section 43(1)). Chance discoveries of archaeological remains are also regulated by the Act: “Any person who, even accidentally, discovers any object, site or building to which this Act applies in accordance with article 3, shall immediately inform the Superintendent, keep the object

¹³ The Antiquities (Protection) Act was repealed by the Cultural Heritage Act of 2002.

found in situ, and shall not for a period of six working days after informing the Superintendent proceed with any work on the site where the object of cultural property is discovered". The details about rights and obligations by all parties in the eventuality of an archaeological discovery are described in Sections 43(3), 43(4), 43(5), 43(6), and 43(7) of the Act.

- 4.44. **Legal Notice 160 of 1997: Rubble Walls and Rural Structures (Conservation and Maintenance) Regulations** (as amended, S.L.552.01). These Regulations protect all rubble walls and non-habitable rural structures 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 soil and water. Walls may be sensitively repaired without prior authorisation. Certain sensitive areas may however be declared to be Rubble Wall Conservation Areas in which no alterations to the location or construction of rubble walls and the traditional methods of their repair and maintenance will be permitted without the written approval of the Planning Authority. In such areas, the Minister for the Environment may order the owner / occupier to repair and re-erect all the rubble walls within the area, and to continue to maintain them. The dismantling of such walls requires a permit from the Planning Authority.

Implications for the Scheme:

- Although there are no scheduled cultural heritage features within the Scheme site, there are two rubble walls. **Chapter 7** of this EIA Report describes the impact of the Scheme in respect of cultural heritage. The impacts on cultural heritage are considered to be of minor significance, depending on the feature and the management of the construction. There is the potential for impacts on unrecorded archaeological artefacts during the excavation to be carried out on the site; the extent of this impact is uncertain, as it will depend on whether artefacts are present, their importance, and the extent of any loss or damage.

Guidelines

- 4.45. Particularly relevant policy guidance is the former MEPA's *Guidelines on Trees, Shrubs and Plants for Planting and Landscaping in the Maltese Islands, 2012*. This document provides detailed guidance on the types of plants that can be used for landscaping purposes in rural, urban, or agricultural situations. The guidance includes methods of planting and lists of species suitable for the different areas.

Implications for the Scheme:

- Landscaping is discussed in **Chapter 3** of this EIA Report, where existing vegetation has been mapped and the proposed landscaping scheme described.

PLANNING POLICY

- 4.46. Planning policy relevant to the Scheme comprises policies embodied in the *Strategic Plan for Environment and Development, 2015*; the *South Malta Local Plan, 2006*; and the *Development Control Policy, Guidance and Standards, 2015*.

Strategic Plan for Environment and Development, 2015

- 4.47. The Strategic Plan for the Environment and Development (SPED) outlines “*proposals for the future spatial distribution of development and the protection of the environment on land and sea in a manner that is consistent with national policies and integrates Government's social, economic and environmental objectives*”. The SPED identifies distinct spatial areas, including the Urban and Rural Areas and Coastal Areas.
- 4.48. The SPED outlines a National Spatial Framework (NSF) for the Maltese Islands. The General Principles of this NSF advocate a sequential approach to the use of land, with the aim of ensuring the sustainable use of land resources and the efficient use of available space. This approach aims to safeguard rural areas, where land take-up should only be considered “*as a last resort and where it is essential for the achievement of sustainable development*”. Specifically, the NSF outlines the sequential approach where development should be guided:
- *Firstly, to the re-use of existing developed land and buildings (through change of use);*
 - *Secondly, to the re-development of existing developed land and buildings; and*
 - *Finally, where no other feasible alternatives exist, to the use of vacant land.*
- 4.49. In relation to guiding socio-economic development, **Thematic Objective I** of the NSF advocates:
- To manage the available potential space and environmental resources on land and sea sustainably to ensure that socio-economic development needs are met whilst protecting the environment and limiting land take up within the Rural Area by:*
- 1. Guiding the location of the bulk of new jobs and homes within the Urban Area...*
 - 5. Achieving a wider mix of compatible uses on land and sea*
 - 6. Reducing development densities of urban settlements*
 - 7. Increasing green open space*
 - 8. Facilitating the implementation of an integrated transport strategy...*
 - 10. Socio-economic development should ensure that rural areas are not exploited by uses which are not legitimate or necessary.*

Implications for the Scheme:

- The Scheme site lies within a rural area and in an Area of Landscape

Protection in close proximity to the Strategic Road Network and an Enterprise Hub as identified in Map 2A of the SPED. As described in **Chapter 3** the Scheme involves the redevelopment of the former Elbros Construction Site. Impacts on the geo-environment, air quality cultural heritage and visual and landscape are discussed in **Chapters 5,6, 7, and 8.**

South Malta Local Plan, 2006

- 4.50. The Scheme site lies Outside Development Zone and falls within the Hal Kirkop Local Council. The South Malta Local Plan (SMLP) recognises that the main issues for the locality are in introduction of traffic management measures to enhance residential amenity, provision of appropriate public urban open spaces, recreational and sports facilities, contain the spread of industrial activities, and rehabilitation and restoration of quarries in the general area. The South Malta Local Plan identifies an Archaeologically Sensitive Area extending to include part of the western boundary of the Scheme site (Policy Map K13 – Kirkop Environmental Constraints Map). In this regard Policy SMCO 04 states that *the MEPA will endeavour to safeguard and protect all archaeological features listed within this Local Plan in accordance with Section 46 of the Development Planning Act, 1992. No development will be allowed which is likely to adversely affect archaeological areas and sites listed as Class A and B or their natural settings. Every effort must be made to preserve these sites in their original state. On Class C, D and E sites, prior to any development occurring, the developer must enter into a planning obligation that secures proper investigation and documentation of these sites, following a monitored programme of archaeological excavation and recording by a competent archaeologist. Development may be allowed on these types of sites subject to modifications as required and as directed by MEPA in consultation with the Museums Department or relevant Government agency, based on an assessment of the archaeological significance of the findings. In considering applications for development permission, MEPA in collaboration with the Museum's Department or relevant Government agency will identify and advise on the level of protection appropriate to the specific area or site in question and it will reserve the right to re classify areas and sites listed as Class E following further investigations.*
- 4.51. The Scheme site also includes a borehole as also shown in Policy Map K13 – Kirkop Environmental Constraints Map and designated under Policy SMCO 08. The Applicant has confirmed that this borehole still exists and that water is still being extracted for use on site.

CONCLUSION

- 4.52. This chapter reviewed the legislation and planning policies. It has considered the relevant laws of Malta, Government Policies, and the policies of the SPED and subsidiary planning documents, as well as EU legislation.

5. GEO-ENVIRONMENT

INTRODUCTION

- 5.1. This chapter describes the geology, geomorphology, and hydrogeology within the Scheme site and in the surrounding area. It also includes an assessment of the impacts and risks posed by the Scheme on the geo-environment.
- 5.2. The key geo-environment issues arising from the Scheme are outlined below:

Key Issues:

- **Extraction of resources / geological features**
- **Impact on ground water quality**
- **Impact on the water cycle, from soil sealing**
- **Impact on surface water run-off**

ASSESSMENT METHODOLOGY

- 5.3. The assessment methodology for the geo-environment study is described below. The guidance on the protection of geology, geomorphology, and hydrogeology is outlined at the outset.

Standards and Policy Guidance

- 5.4. The principal sources of guidance for the impact assessment were the *Strategic Plan for the Environment and Development 2015*, the *Structure Plan for the Maltese Islands 1992*¹⁴, the *South Malta Local Plan 2006*, the draft *Minerals Subject Plan 2002*, and *The Earth Conservation Strategy 1991* (The British Nature Conservancy Council).
- 5.5. The European Union (EU) does not have any directive that protects the geo-environment *per se*; however, Directive 92/43/EEC (Habitats Directive) seeks to preserve and protect certain geological / geomorphologic features where these features constitute important habitats. Important habitats include rocky coastlines and submerged caves. This Directive has been transposed into national legislation (Legal Notice 311 of 2006 / S.L. 549.44).
- 5.6. Conservation profiles are intended to prevent future potential damage to sites. Since

¹⁴ The *Structure Plan for the Maltese Islands 1992* has been superseded by the *Strategic Plan for the Environment and Development 2015* (SPED); however, the SPED does not outline policy guidance relating to the geo-environment in the level of detail that it was outlined in the Structure Plan. In the absence of specific policy guidance, reference is still made to the relevant policies of the Structure Plan.

no earth conservation model exists for the Maltese Islands, it has been suggested in past studies (for example, Debono & Scerri, 1996¹⁵ and Mallia *et al.*, 1999¹⁶) that until such a model is formulated, models used in other countries can be adopted for local use. The conservation model that has been used is that adopted by The Earth Conservation Strategy of the Nature Conservancy Council (UK).

Area of Influence

- 5.7. The Area of Influence (A of I) for the geology and hydrology studies is shown in **Figure 5.1**.

Geo-environment Methodology

- 5.8. The geo-environment study involved:
- Identification and description of the geology, geomorphology and hydrogeology of the Scheme site and the respective areas of influence;
 - Identification, mapping and description of the structural features present, outcrop formations, members, or bed sub-divisions, including their palaeontologic content;
 - Identification and description of aquifers, water courses, drainage patterns, surface run-off, and springs and wells; and
 - Identification of features protected by legislation, or which warrant such protection, and their appropriate level of protection, as necessary.
- 5.9. The study resulted in the preparation of a geological map, and hydrology map. A Geotechnical Investigation¹⁷ was also carried out. The quality of the material to be excavated was assessed by visual examination of the rock exposed at the site, using past geological experience acquired in studies and by examination of the rock core samples. Samples were taken from the locations shown in **Figure 5.2**.

¹⁵ Debono, G. and Scerri, S., 1996. North Harbours Local Plan Geology Survey Report. Prepared by Malta University Services for the Planning Authority, Floriana, Malta; 72 pp. + 210 data cards + 15 figures + 20 plates.
¹⁶ Mallia, A., Briguglio, M., Ellul, A.E., and Formosa, S., 1999. Population, Tourism, Land-Use and Non-Renewable Resources in the State of the Environment Report for Malta 1998, commissioned by the Environment Protection Department, Government of Malta, Malta Council for Science and Technology, Malta.
¹⁷ Terracore, 2024. Proposed Geotechnical Investigations at Elbros Plant, Kirkop. Ground Investigations Report

Figure 5.1: Geology and Hydrology Area of Influence

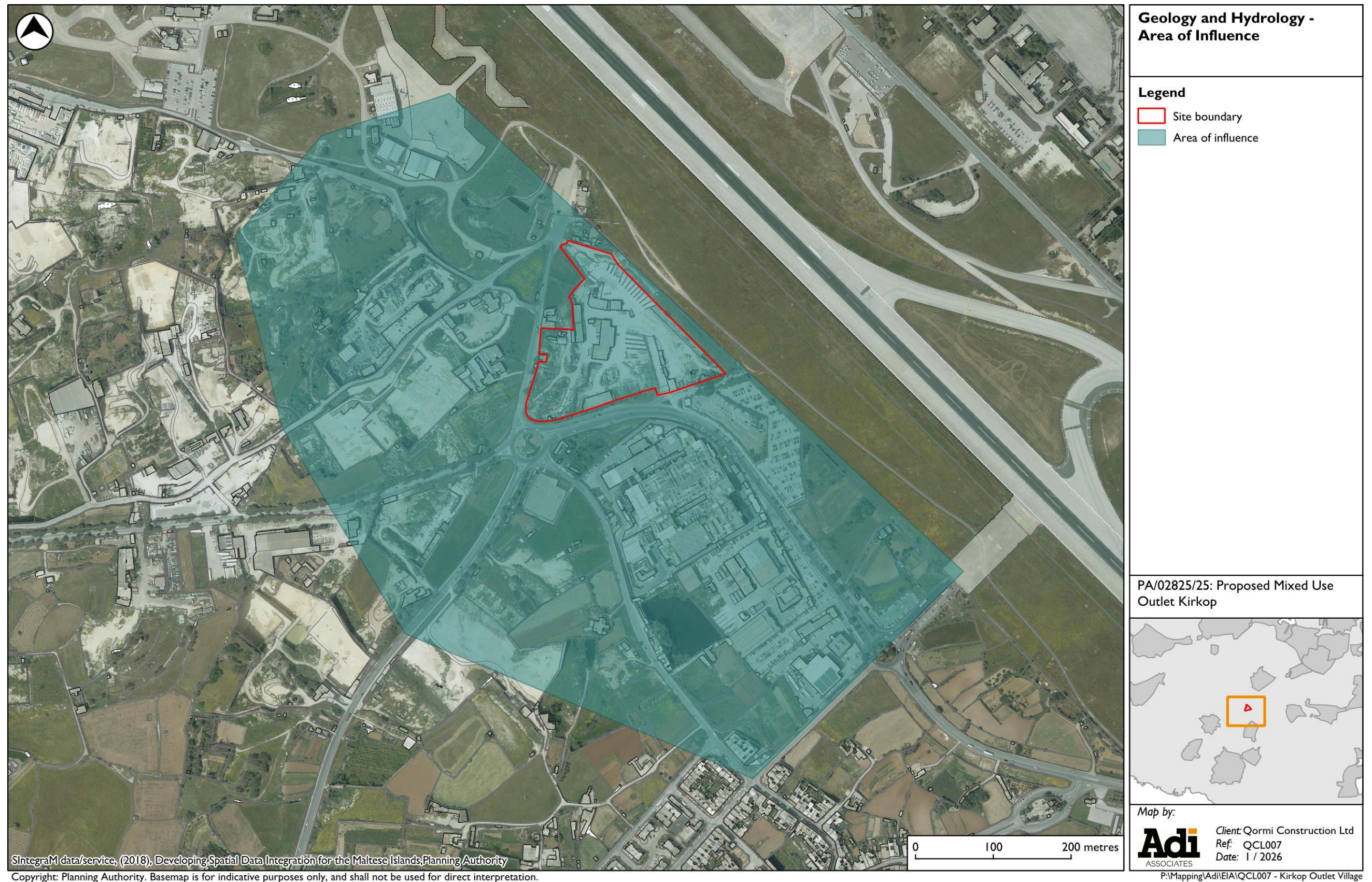
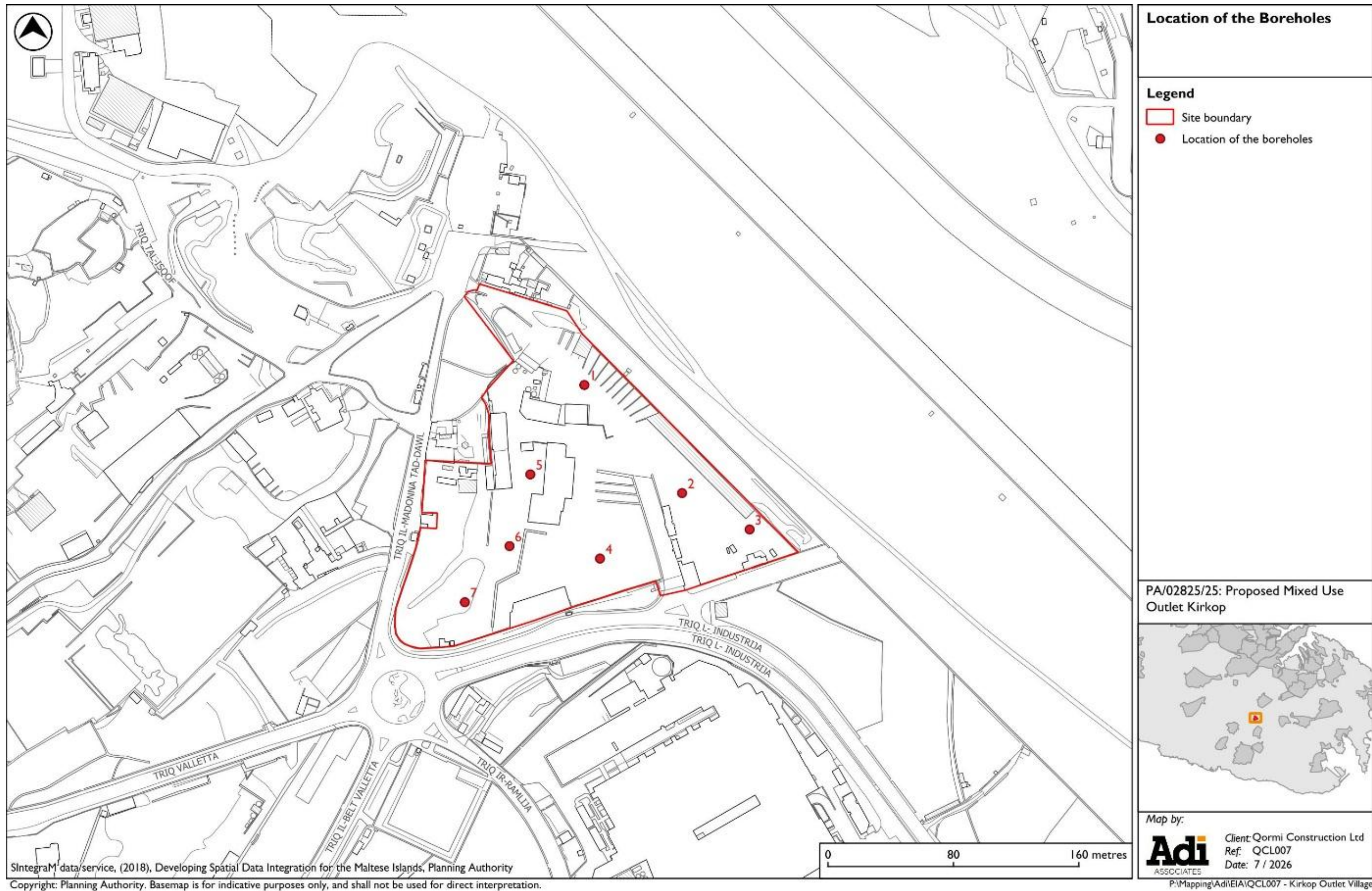


Figure 5.2: Location of Testing Boreholes



BASELINE: GEOLOGY

Stratigraphy

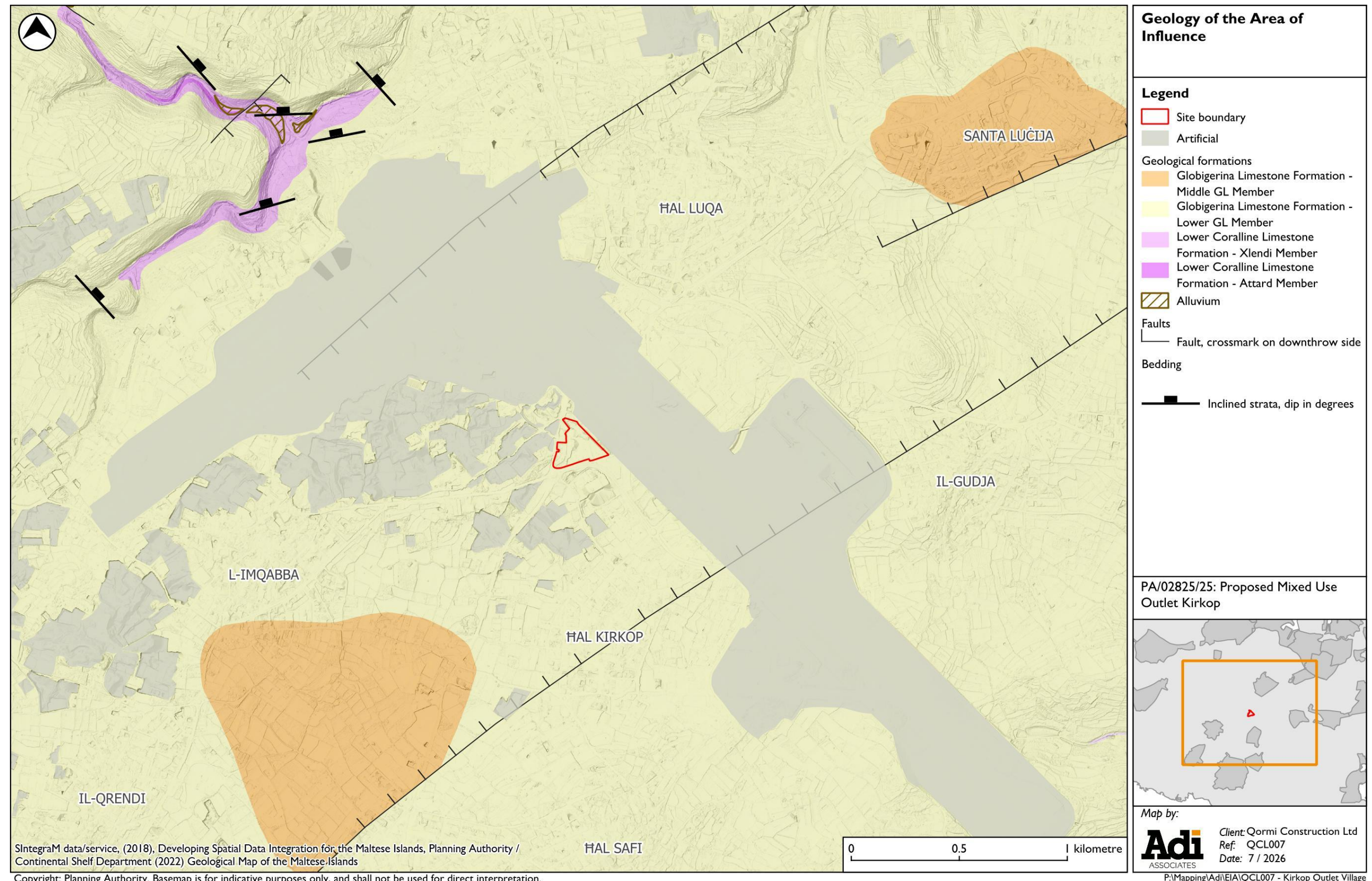
- 5.10. The five late-tertiary formations exposed on the Maltese Islands are:
 - Upper Coralline Limestone (youngest);
 - Greensand;
 - Blue Clay;
 - Globigerina Limestone; and
 - Lower Coralline Limestone (oldest).
- 5.11. In addition to these formations, Quaternary continental deposits are also known to occur sporadically on the Maltese Islands.
- 5.12. The strata of relevance to this project, from oldest to youngest, are the Lower Coralline Limestone formation and the Globigerina Limestone formation.
- 5.13. *Lower Coralline Limestone Formation:* This is the oldest exposed formation and consists predominantly of pale grey to buff limestone rich in coralline algae, which, at the surface is generally hard and compact, often due to weathering and calcification processes. However, at depth it can sometimes be much less stiff and compact, sometimes resembling a compacted sand of very low interparticle cementation. Along the western and southern shorelines of the Maltese Islands, it is sufficiently cohesive to sustain vertical faces in excess of 100 m, thus forming steep coastal cliffs. Due to its relatively high mechanical strength, it generally forms a competent foundation stratum where it is proven.
- 5.14. *Globigerina Limestone Formation:* Overlying the Lower Coralline Limestone, and separated from it by a phosphatised hardground, the Globigerina Limestone formation consists mainly of fine-grained, yellowish to pale grey biogenic limestone that are composed largely of planktonic foraminifera. It is subdivided into Lower, Middle, and Upper members separated by further phosphatic hardgrounds, the former of these being of relevance to this project. This formation is widely distributed across Malta and forms gently undulating terrain and many of the island's low hills and plains. It is relatively soft and workable, making it historically significant as a building stone. According to the Geological Map of Malta (1993), the bedrock underlying the site corresponds to the Globigerina Limestone formation (**Figure 5.1**), specifically the Lower member (LGL). The LGL can be described as a fine to medium-grained biomicritic limestone mainly composed of Globigerina foraminifera fossil shells, and which is typically massively bedded. Two main types are identified, locally known as 'franka' and 'soll'. The 'franka' layer is a fine grained, cream coloured wackestone of economic value as it is quarried for masonry blocks. The 'soll' bed is generally rust mottled and bioturbated, sometimes exhibiting a grey to olive colour. Surface weathering of the Lower Member is often developed by the formation of sub-horizontal joints or fissures that are sometimes gradually filled with

terrassa soils over the millennia. This weathered layer is rarely of uniform thickness, and the soil-filled beds (generally containing Terrarossa soils) can be found anywhere within the uppermost part of the sequence. The thickness of this member at the site is not known; however, the underlying Mara member of the Lower Coralline Limestone formation is mapped in outcrop at some 1.7 kilometres northwest of the site, exposed along the valley slopes of Wied Qirda. Based on the approximate elevation at which the Lower Coralline Limestone Formation is known to outcrop in the wider area (circa 60 m above mean sea level) and the approximate elevation of the site, where the Lower Globigerina Limestone Member (LGL Mmb) occurs at around 80 m above mean sea level, the local thickness of the LGL Mmb may be approximated at ~20 m. This indicative thickness is greater than the anticipated maximum excavation depth for the project (-12.6 m for the basement and -15.6 for the water reservoirs), suggesting that excavation works are likely to remain within the Lower Globigerina Limestone. This interpretation is supported by the site-specific ground investigation, which provides evidence that coring proceeded solely within the Lower Globigerina Limestone across all boreholes drilled, and did not encounter the Lower Coralline Limestone before the maximum borehole depth of 14–17 m below ground level was reached.

Structural Geology

- 5.15. The site is located approximately mid-way between two sub-parallel inferred faults oriented southwest to northeast; one extends from the coast of Żurrieq to Għaxaq (circa 5.10 km in length), whilst the other extends from Il-Wileg to the northern part of the Malta International Airport (circa 7.85 km in length). Given the reported distance of the site from the nearest inferred fault traces (approximately 0.75–1.0 km), the site is not expected to lie within a typical fault core or immediate damage zone where intensely fractured rock, gouge, or shear zones would ordinarily be most prevalent. This is consistent with the ground investigation findings, which indicate predominantly fair-to-excellent quality Lower Globigerina Limestone core recovery and do not describe fault gouge, intensely sheared intervals, or markedly degraded core quality that would be indicative of a fault zone intersecting the boreholes.

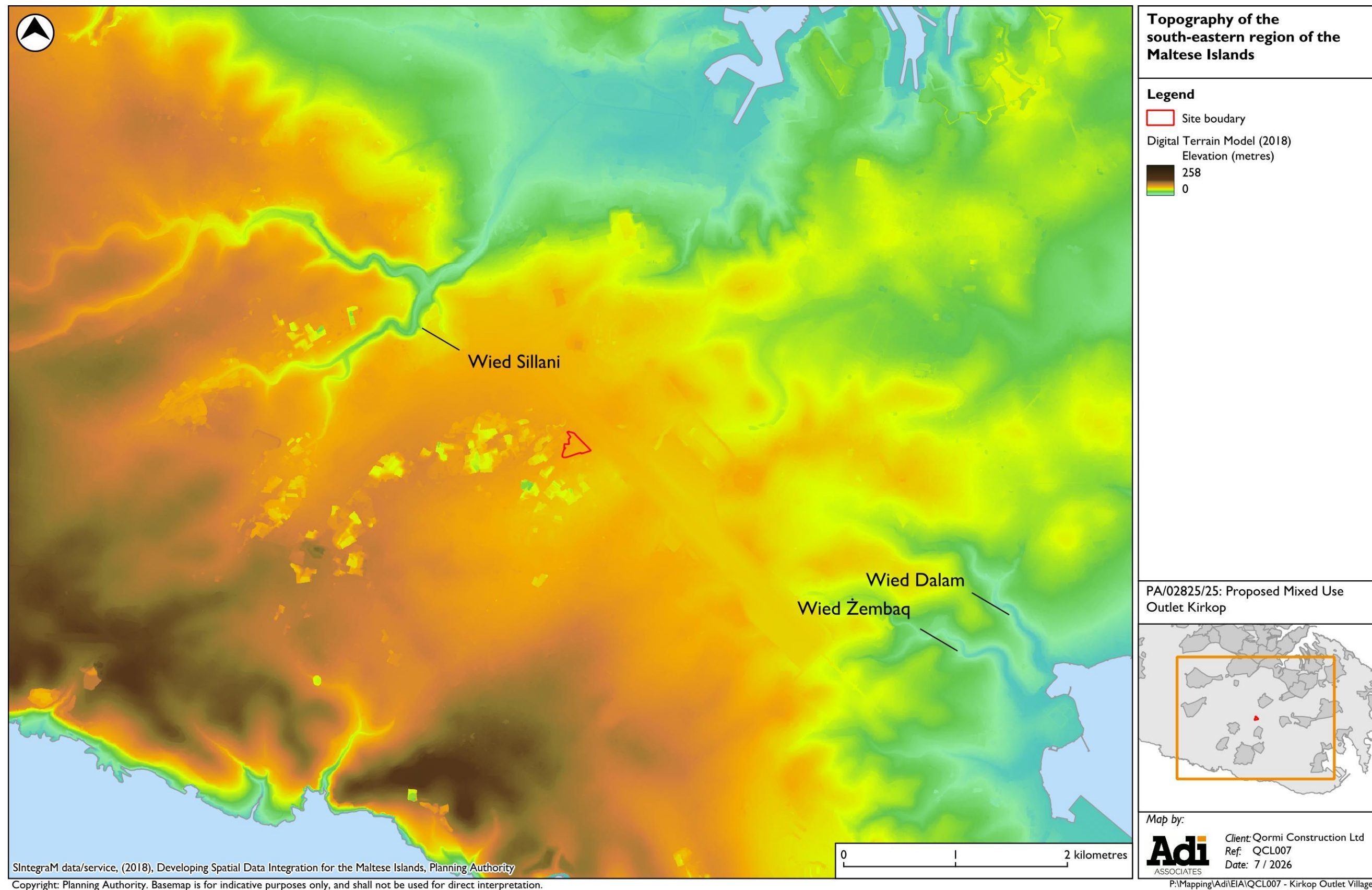
Figure 5.3: Geology of the Area of Influence



BASELINE: GEOMORPHOLOGY

- 5.16. The current landscape of the Maltese Islands is the result of long-term interaction between geological structure, lithology, marine processes and subaerial erosion. Key geomorphological features include coastal cliffs and platforms, particularly along western Malta and Gozo, karstic landscapes, terraced slopes, dry valleys (widien), and plateaus and gently undulating plains. Surface processes such as weathering, mass movement and coastal erosion continue to modify the landscape.
- 5.17. In geomorphological terms, surface drainage in southern Malta is commonly organised into short catchments that feed dry valleys (widien), which function as preferential runoff pathways during storms and convey flows towards the coast. Hal Kirkop is situated in the southern-central part of Malta, within a landscape that is generally characterised by gently undulating to low-relief terrain developed predominantly in the Globigerina Limestone succession. This part of Malta forms part of a broad limestone plateau and rural–industrial fringe where natural landforms have been locally modified by long-standing anthropogenic activity (including quarrying/industrial uses and associated infrastructure), resulting in extensive areas of re-profiled ground and hardstanding. The wider Kirkop–airport area therefore sits within a setting where minor local lows, road corridors, and engineered drains can influence runoff routing towards downstream valley systems and coastal discharge points, a consideration reflected in Malta’s catchment management and flood hazard mapping frameworks.
- 5.18. The Scheme site lies immediately adjacent to major strategic infrastructure associated with the airport/industrial estate area, and the local topography is very gently sloping, with surface drainage expected to occur mainly as episodic runoff during intense rainfall events, consistent with the typically ephemeral nature of Maltese watercourses.

Figure 5.4: Topography of the south-eastern region of the Maltese Islands



Soils

- 5.19. Soil development in the Maltese Islands is closely linked to the underlying geology, topography, climate, and land-use history. Several main soil types are recognised across the Maltese Islands, typically classified according to colour, composition, and parent material. Of relevance to the Scheme site are Terra Rossa and Xerorendzina soils.
- 5.20. *Terra Rossa soils* are among the most characteristic soils of the Maltese Islands and are typically associated with limestone terrains, particularly over Upper and Lower Coralline Limestone formations. These soils are generally reddish-brown in colour due to the presence of iron oxides. According to the drift map by Lang (1960), the area of the Scheme is indicated to be covered by the Terra Rossa soils, but the degree of anthropogenic disturbance in this area makes this highly doubtful, and if any of these soils remain, they are likely to be limited to isolated patches. Lang's soil map for the Maltese Islands (1960) indicates that the soils found within this area are mainly from the Terra Soil – Tas-Sigra series. The tas-Sigra series is classified as an earthy terra fusca according to the Kubiena (1953) classification.
- 5.21. *Xerorendzina soils* are indicated to exist just to the south of the Scheme site. These are thin, immature soils developed over Globigerina Limestone and other calcareous parent materials. These soils are generally pale brown to grey in colour, with a high calcium carbonate content and limited profile. They are commonly shallow, stony and prone to erosion, particularly on sloping terrain. Due to their limited depth and low organic matter content, xerorendzina soils have relatively low water-holding capacity and fertility. They are often associated with abandoned or marginal agricultural land and semi natural garigue landscapes. Soil erosion is recognised as an important land degradation process in the Maltese Islands, largely driven by shallow soils, sloping terrain and episodic high-intensity rainfall events. A national-scale assessment undertaken by Sultana (2015) for the Malta Environment and Planning Authority identified soil erosion by water as a significant constraint on soil sustainability in Malta, particularly where soils are exposed and runoff is concentrated. Within this modelling framework, the area of the Scheme site falls within a zone mapped as having negligible soil loss by water erosion (i.e., effectively no predicted erosion under the model assumptions), reflecting the local terrain and land-cover characteristics used in the assessment. No measurable or visible evidence of active soil erosion (such as rilling, gully, sediment deposition, or exposed subsoil profiles) was observed within the Scheme site. This is consistent with the largely level topography of the site and its current predominantly developed/hardstanding condition, which limits the presence of exposed natural soil surfaces. Notwithstanding, temporary soil erosion risk may increase during construction phases where excavation and stockpiling expose bare soils; therefore, appropriate sediment and runoff management measures should be implemented as part of standard construction environmental management practice.

Quality of Stone Material to be Excavated

- 5.22. More detailed information on the rock characteristics beneath the Scheme site is

provided in the Ground Investigation Report prepared by Terracore and included in **Technical Appendix 2: Geo-Environment Baseline Survey and Geo-Technical Report**. The investigation included seven vertical boreholes (BH1 to BH7) drilled to depths of between 14 m and 17 m below existing ground level as shown in **Figure 5.2** above. The boreholes were positioned in coordination with the project design team to provide representative coverage across the Scheme site and to investigate conditions below the anticipated excavation depth.

- 5.23. As mentioned, the borehole records indicate that the site is underlain entirely by the Lower Globigerina Limestone Formation within the explored depth range. No Lower Coralline Limestone was encountered during the investigation, suggesting that this formation occurs at greater depth beneath the site than the depths explored by the current boreholes.
- 5.24. Laboratory testing was carried out on selected core samples recovered during the investigation. The testing programme included unconfined compressive strength (UCS) testing, together with measurements of bulk density and moisture content. Additional parameters such as porosity, void ratio, degree of saturation and saturated density were derived using representative particle density values for the limestone. These derived parameters provide an indication of the pore structure and general engineering behaviour of the rock.
- 5.25. The laboratory results indicate that the Lower Globigerina Limestone beneath the site is generally of moderate density and variable but overall competent strength. Bulk unit weight values ranged approximately between 18.5 kN/m³ and 20.5 kN/m³, while dry unit weight values averaged approximately 17.0 kN/m³. Porosity values were typically between 33% and 39%, indicating a relatively open pore structure characteristic of Globigerina Limestone.
- 5.26. The measured UCS values ranged from approximately 6.9 MPa to 16.3 MPa, with an average value of around 12.1 MPa. These values are considered consistent with the expected behaviour of weak Lower Globigerina Limestone. Some variability in strength was observed between specimens, particularly at greater depth. This variability is likely related not only to density and moisture conditions, but also to differences in cementation, fossil content, micro-fracturing, and rock fabric, which are typical features of porous bioclastic limestones.
- 5.27. The degree of saturation measured in the samples ranged between approximately 57% and 97%. Since partially saturated limestones can exhibit slightly higher apparent strength than fully saturated material, the laboratory strength values should be interpreted with some caution. Nevertheless, the overall results indicate a generally competent limestone rock mass suitable for the Scheme, subject to consideration of local discontinuities and excavation conditions.
- 5.28. Assessment of the recovered borehole cores included measurements of Total Core Recovery (TCR), Solid Core Recovery (SCR) and Rock Quality Designation (RQD). These parameters provide an indication of the degree of fracturing and overall quality of the rock mass. The recorded RQD values generally fall within the fair to excellent

quality range, with many intervals classified as good to excellent quality rock. Increased fracturing was mainly observed within the upper weathered portion of the rock profile, while deeper sections were generally more intact and massive in character.

- 5.29. No significant loss of drilling fluid circulation, major cavities or karstified zones were encountered during drilling. This suggests that discontinuities within the limestone are generally tight and not significantly enlarged by dissolution. Similarly, no evidence of major faults, sheared zones, or highly disturbed ground conditions was identified within the investigated depth range.
- 5.30. Overall, the ground investigation indicates that the site is underlain by a relatively competent Lower Globigerina Limestone rock mass of generally good quality, with limited fracturing and no evidence of significant karstification or major structural disturbance.
- 5.31. Excavation works are expected to generate two principal material types, namely shallow overburden/topsoil and the underlying Lower Globigerina Limestone. Topsoil and superficial materials should, where practicable, be stripped and stored separately to preserve their suitability for reuse in landscaping or site reinstatement works.
- 5.32. The majority of excavation arisings are expected to comprise Lower Globigerina Limestone. Given the generally good rock quality and the relatively high RQD values recorded during the investigation, there may be potential for part of the excavated limestone to be recovered as usable stone blocks for construction purposes. Alternatively, the material may also be reused as general fill material, provided that appropriate grading and handling procedures are adopted. Particular attention should be given to the potential presence of excessive fine material, as this may reduce permeability and adversely affect compaction behaviour if used as engineered fill. Where reuse as engineered fill or pavement material is proposed, the suitability of the material should be confirmed through additional grading and materials testing.

BASELINE: HYDROGEOLOGY

- 5.33. The site is located within the southern Malta plateau, in an area characterised by the short and ephemeral drainage systems that are typical of the Maltese Islands. No natural watercourses traverse the site, and surface runoff is expected to occur primarily as overland flow during periods of intense rainfall.
- 5.34. The nearest mapped valley system is Wied is-Sillani, located approximately 1.6 km northwest of the site. A larger valley system associated with Wied Dalam / Wied Żembaq lies approximately 3 km to the southeast. These valleys form part of separate local catchments draining towards the western and southeastern coastal areas respectively (see **Figure 5.5**).
- 5.35. Based on the available topographic data and the generally level nature of the site, the Scheme site does not lie within the main channel corridor of any of these valley systems. The site is therefore not situated within the principal drainage axis of a

major watercourse, and the potential for flooding or overflow from established valley systems is considered low. Surface water management associated with the Scheme will therefore primarily focus on the control, attenuation, and managed discharge of on-site runoff, rather than interaction with an existing natural watercourse.

- 5.36. The site occupies a gently sloping interfluvial area rather than the main thalweg of a defined valley system. Surface runoff generated within the site is therefore expected to flow predominantly westwards to south westwards, following local topographic gradients before joining minor drainage pathways that ultimately contribute to the broader downstream valley systems.
- 5.37. The upstream catchment contributing runoff towards the site is relatively limited in extent and is mainly confined to adjacent agricultural and semi-developed land located to the east and northeast. Preliminary GIS-based catchment delineation derived from the digital elevation model (DEM) indicates that the contributing catchment is modest in scale when compared to the larger valley systems, including Wied is-Sillani and Wied Dalam/Wied iż-Żembaq.
- 5.38. The site is located along the upper peripheral portion of a small local surface water catchment. The topographic model indicates that ground levels decrease gradually from the eastern and northeastern areas of the A of I towards the west and southwest, where runoff is ultimately conveyed towards the wider drainage system associated with the Kirkop–airport corridor.
- 5.39. Given the predominantly hardstanding and developed nature of the site, together with the anticipated increase in impermeable surfaces associated with the Scheme, local surface runoff volumes and peak flow rates are expected to increase unless suitable stormwater attenuation and controlled discharge measures are incorporated into the design. Surface water management will therefore need to include on-site storage and gradual release systems in order to minimise the potential for increased downstream runoff concentration and flooding risk.
- 5.40. The proposed excavation formation level for the Scheme is approximately +64.7 m above mean sea level, which is only around 0.3 m above the observed water level within a nearby disused quarry. Although the available evidence suggests that the quarry water is localised and does not represent a regional groundwater level, the similarity in elevation is relevant from both a hydrogeological and construction perspective.
- 5.41. In particular, if the ponding within the quarry is associated with a local low-permeability horizon, and if a similar horizon is present beneath the site at or close to the proposed excavation level, excavation works could encounter perched water, damp zones or local seepage conditions. Such conditions would be most likely following prolonged or intense rainfall events, when perched water levels may temporarily rise. In this context, the potential issue would not necessarily involve interception of a regional aquifer, but rather the exposure of locally perched water-bearing conditions within the Lower Globigerina Limestone.

- 5.42. The available laboratory tests do not provide direct evidence for the presence or absence of such a low-permeability horizon, as permeability testing was not undertaken. The laboratory results do, however, confirm that the limestone is porous and exhibits variable moisture content and degrees of saturation. These findings indicate that the rock mass is capable of retaining water to varying extents, although they do not establish whether groundwater movement is controlled primarily by matrix permeability, discontinuities, bedding interfaces, or localised fine-grained horizons.
- 5.43. Accordingly, the possible presence of localised low-permeability material and associated perched water conditions at excavation level should be treated as a potential construction risk requiring further verification, rather than as a confirmed site condition.
- 5.44. Although the absence of ponding in the deeper nearby quarries reduces the likelihood of a continuous groundwater table at approximately +64.4 m above mean sea level, it does not entirely preclude the occurrence of local perched water conditions within the proposed excavation footprint. Given the scale of the excavation and the proximity of the proposed formation level to the observed quarry water level, it would be prudent to incorporate appropriate construction-phase water management measures. These may include monitoring for seepage during excavation works, provision for temporary sump pumping, maintenance of temporary drainage pathways within excavated areas, and verification of groundwater or perched water conditions through standpipe monitoring, targeted trial investigations or permeability testing prior to or during excavation. Particular attention should be given following periods of heavy rainfall, when perched water levels and quarry ponding may temporarily increase.
- 5.45. The immediate environs of the site contain a number of boreholes that are used for groundwater extraction, as shown in **Figure 5.6**.
- 5.46. The nearest private borehole appears to be within the western boundary of the site, with several other boreholes immediately downstream. These boreholes are likely to extend to the lower freshwater table immediately above sea level. The rocks in this area, according to the geological map and later confirmed, in part, by the findings of the investigation for this project, are generally of sufficiently high secondary permeability to preclude the formation of perched water tables in this area. The presence of the Lower Coralline limestone suggests that permeability is likely to increase with depth, in this area. The top layer of Globigerina limestone is generally of lower permeability, and would therefore reduce seepage to the deeper layers, unless the rock mass is very intensely fissured. There are no water galleries in the immediate vicinity of the site.

Figure 5.5: Water Catchment area indicated in green on topographical map

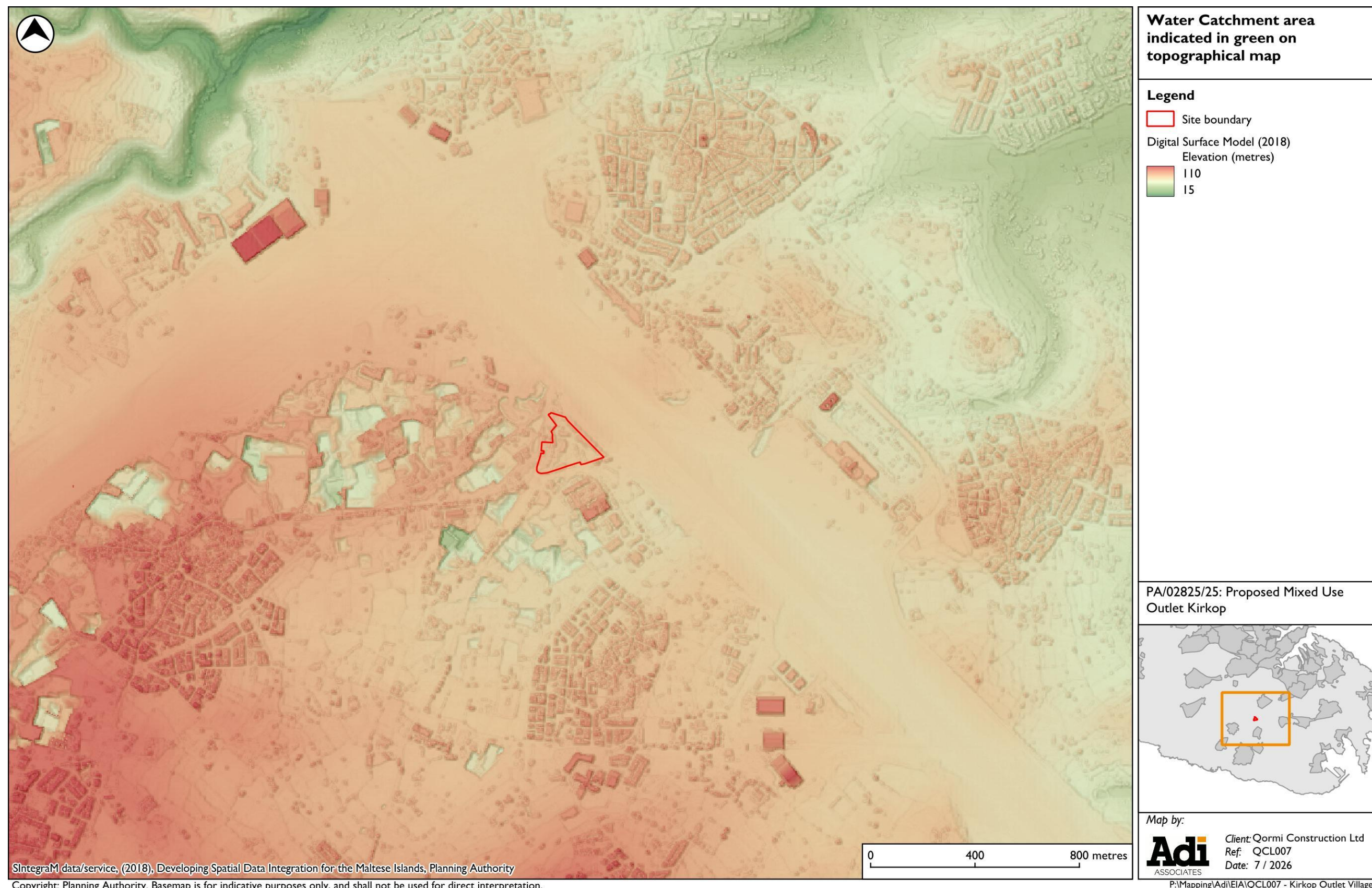
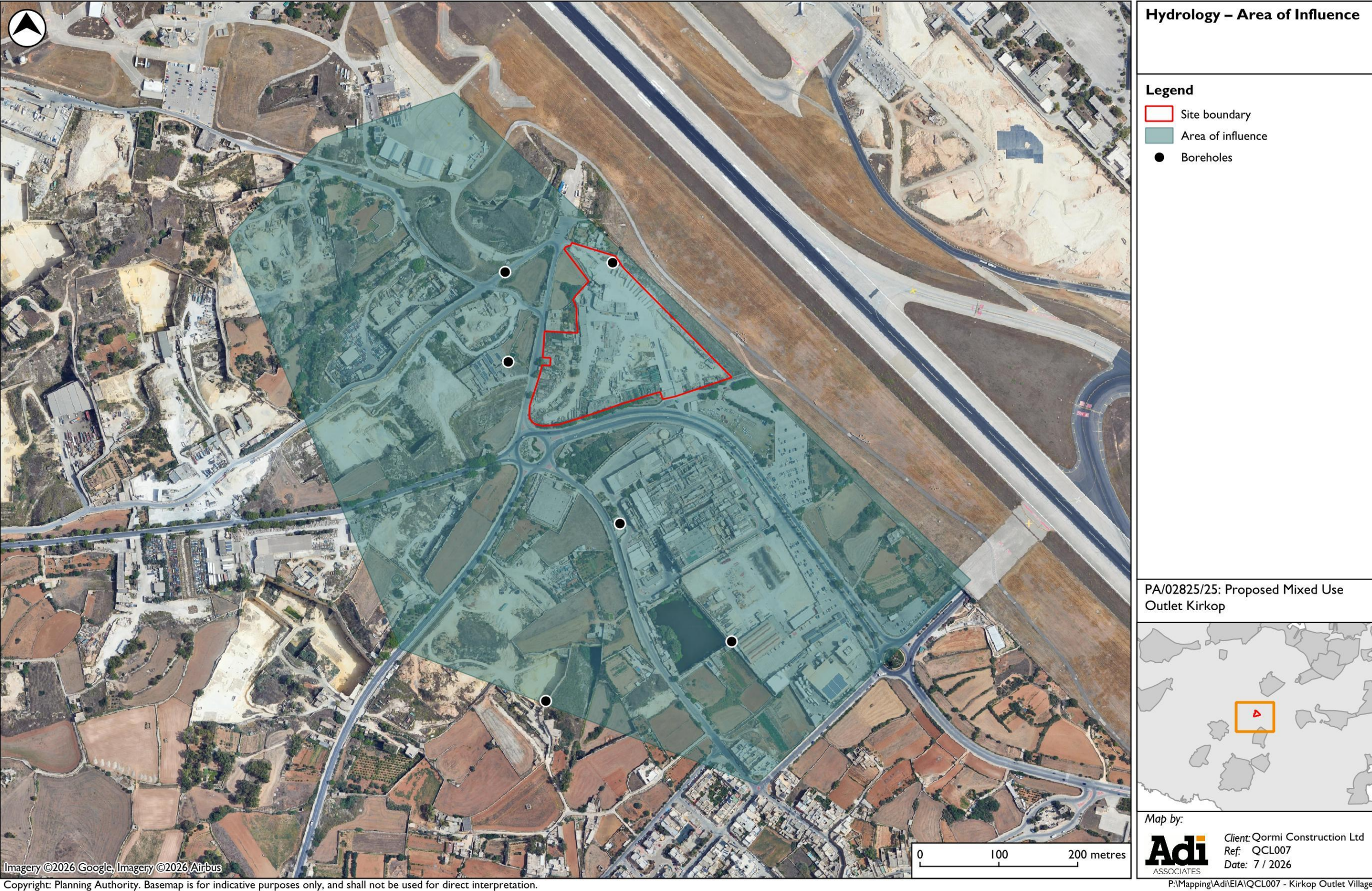


Figure 5.6: Location of boreholes



ASSESSMENT OF IMPACTS

Impact Significance

5.47. The following criteria were used to assess the significance of the impacts by the Scheme on the geology, geomorphology, and hydrogeology within the respective areas of influence:

- **Not significant:**
 - Little or no change to the geological, geomorphological, and hydrogeological regime.
- **Minor significance:**
 - Changes to the geological, geomorphological, and hydrogeological regime that may affect neighbouring properties, but which may be offset by mitigation measures.
- **Major significance:**
 - Changes to the geological, geomorphological, and hydrogeological regime that may affect neighbouring properties, and which may not be offset by mitigation measures (if negative) or may be enhanced by mitigation measures (if positive).

Prediction and Significance of Impacts

Extraction of Resources / Features

5.48. The excavation of approximately 337,000 m³ of Globigerina Limestone represents a permanent loss of a non-renewable geological resource and therefore constitutes a major adverse impact.

Impact on Ground Water

5.49. The predicted impact of the Scheme on ground water contamination is considered to be of no significance. As mentioned, there are no water galleries in the vicinity of the Scheme site and there is no perched aquifer at the Scheme site. The proposed activities at the Scheme site are unlikely to result in groundwater impacts given the in-built measures designed to avoid contamination of ground and surface water, including the collection of rainwater.

5.50. The Scheme, however, will increase the extent of impermeable surfaces and therefore reduce local infiltration and groundwater recharge. However, given the site's existing developed condition and limited remaining natural soils, the impact on the local water cycle is considered to be of minor adverse significance, subject to the incorporation of infiltration measures and sustainable drainage features.

Impact on Surface Water

5.51. Given the large excavation volume, it is likely that there will be significant areas of

bare ground that will be exposed. Malta's weather during the winter means that there could be short-duration, high-intensity rainfall events. During excavation and construction works, temporary impacts may arise through sediment-laden runoff, transport of fine limestone particles, and pollution of downstream drainage systems. Given the scale of excavation proposed, temporary, localised and reversible impacts are expected. With the implementation of sediment control measures, settlement facilities, phased excavation works and appropriate stockpile management, impacts on surface water quality are expected to be of minor adverse significance.

- 5.52. During operation, the Scheme will increase both runoff volumes and peak discharge rates due to the increase in impermeable surfaces. Without mitigation, this could increase flood risk and runoff concentration within the wider Kirkop-airport drainage catchment. However, the site lies outside major valley systems and flood corridors, and with appropriate attenuation tanks, controlled discharge systems, and sustainable drainage measures, the impact is expected to be of minor significance.

MITIGATION

- 5.53. During excavation and construction works, temporary impacts may arise through sediment-laden runoff and erosion of exposed surfaces. To minimise these impacts:
- Earthworks should, where practicable, be phased to minimise the area of exposed ground at any one time.
 - Temporary drainage channels and cut-off drains should be installed to divert clean runoff away from excavation areas.
 - Sediment traps, settlement tanks or silt fences should be installed where runoff may carry suspended solids.
 - Stockpiles of soil and excavated material should be located away from drainage pathways and protected from erosion by sheeting or temporary stabilisation.
 - Wheel-wash facilities and road-sweeping measures should be implemented where required.
 - Particular attention should be given to runoff management during the winter months and before forecast heavy rainfall events.
- 5.54. While the loss of the resource cannot be fully mitigated, the significance of associated environmental effects can be reduced through maximisation of material recovery and reuse on site as road sub-base material, structural fill; landscaping and retaining structures, and aggregate for non-structural concrete where technically suitable. Where on-site reuse is not feasible, the material should be transferred to a licensed aggregate processing facility. These measures would ensure the efficient utilisation of excavated materials in accordance with circular economy principles. Backfilling of void quarry spaces should be avoided as much as practicable.
- 5.55. Although the Scheme is proposed on a site that is already substantially disturbed and

partially covered by hardstanding, the development will result in an increase in impermeable surfaces and a consequent reduction in natural infiltration. To minimise impacts on the local water cycle, the following measures should be implemented:

- The extent of impermeable surfaces should be minimised wherever practicable through the incorporation of landscaped areas, planting beds and permeable surfaces.
- Permeable paving systems should be considered for parking areas, pedestrian zones and other low-traffic surfaces to promote infiltration and reduce runoff generation.
- Areas of existing soil suitable for reuse should be stripped, stored separately, and reused in landscaping works.
- Landscaping schemes should maximise vegetated surfaces and include native drought-resistant species capable of enhancing soil permeability and evapotranspiration.
- Opportunities for infiltration-based Sustainable Drainage Systems (SuDS), including infiltration trenches, soakaways and bioretention areas, should be investigated during detailed design, subject to geotechnical and hydrogeological suitability.

5.56. To prevent increased runoff volumes and peak discharge rates from affecting downstream drainage systems, an integrated stormwater management strategy should be adopted. The strategy should include:

- Attenuation systems designed to accommodate runoff generated during major storm events, including consideration of future climate change projections.
- Controlled discharge mechanisms limiting post-development runoff rates to existing or pre-development levels.
- Underground attenuation tanks, oversized pipe networks or other storage facilities capable of temporarily retaining stormwater during peak rainfall events.
- Rainwater harvesting systems for irrigation and non-potable water uses to reduce runoff volumes and improve water resource efficiency.
- A maintenance programme ensuring the continued operation and effectiveness of stormwater infrastructure.

5.57. Where feasible, the development should adopt a SuDS approach incorporating:

- Permeable pavements;
- Swales and vegetated drainage channels;
- Rain gardens and bioretention systems;

- Infiltration trenches;
- Green roofs where structurally feasible.

5.58. These measures will reduce runoff velocity, increase temporary storage, enhance infiltration and improve water quality.

Residual Effects

5.59. Residual impacts following the application of mitigation measures will remain of major negative significance in the case of the extraction of mineral resources.

5.60. With the implementation of the above mitigation measures, impacts associated with soil sealing, groundwater recharge reduction and increased surface water runoff are expected to be of minor adverse significance. The incorporation of attenuation and infiltration measures would ensure that the development does not materially increase downstream flood risk or adversely affect local drainage conditions.

Table 5.1: Summary of Impacts on the Geo-environment

Asset Impacted	Beneficial /adverse	Nature, Scale and Type of Impact						Probability of Impact Occurring (likely/ unlikely/ remote/ uncertain)	Significance of Impact (major/ moderate/ minor/not significant)	Proposed Mitigation Measures	Significance of Residual Impact (major/ moderate minor/not significant)
		Constr'n /Oper'n	Extent of Impact (nat/ local /site)	Direct/ indirect	S'term/ l'term	Perm/ temp	Revers/ irrevers				
Mineral resources	Adverse	Constr'n	Local	Direct	Long-term	Perm	Irrevers	Likely	Major significance	Explore possibility of using some of the rock in blockwork. Use of excavated rock as fill material on site or off site Use of soil in landscaping on site	Major significance
Change in the quality of ground water	Adverse	Constr'n / Oper'n	Local	Indirect	Short-term / Long-term	Perm	Irrevers	Likely	Minor significance	Measures to eliminate pollution and runoff during construction included in CMP and implemented on site	Not significant

Asset Impacted	Beneficial /adverse	Nature, Scale and Type of Impact						Probability of Impact Occurring (likely/ unlikely/ remote/ uncertain)	Significance of Impact (major/ moderate/ minor/not significant)	Proposed Mitigation Measures	Significance of Residual Impact (major/ moderate minor/not significant)
		Constr'n /Oper'n	Extent of Impact (nat/ local /site)	Direct/ indirect	S'term/ l'term	Perm/ temp	Revers/ irrevers				
Change in the surface water run-off patterns during construction	Adverse	Constr'n	Local	Direct	Long-term	Perm	Irrevers	Likely	Minor significance	Measures to eliminate pollution and runoff during construction included in CMP and implemented on site In-built design measures	Minor to not significant
Soil sealing following construction of the Scheme	Adverse	Constr'n	Local	Direct	Long-term	Perm	Irrevers	Likely	Minor significance	Measures to allow infiltration in open and landscaped areas	Minor significance

6. AIR QUALITY

INTRODUCTION

- 6.1. This chapter addresses the potential impacts of the emissions from the operational aspects of the Scheme on air quality.
- 6.2. The key issue for the assessment is:

Key Issue:

- **Effects of air emissions arising from operation of the Scheme on sensitive receptors**

Objectives of the Assessment

- 6.3. The objectives of the air quality study are to:
- Quantify the expected air emissions from traffic resulting from operation of the Scheme, and assess their impact on air quality;
 - Assess cumulative impacts from developments in the area; and
 - Propose mitigation measures to reduce the impact, if any, of traffic emissions resulting from operation of the Scheme.
- 6.4. The air quality assessment focuses on the potential impacts on air quality as a result of vehicular traffic arising from the operation of the Scheme. Construction road traffic has been scoped out of this assessment since the daily threshold of 200 heavy vehicle movements¹⁸ will not be exceeded; it is estimated there will be a maximum of 70-100 truck movements daily during peak excavation.
- 6.5. It is noted that a positive impact on the air quality from the removal of the current operation is expected, especially following completion of the construction of the Scheme. The current operations generate dust emissions within and outside the Scheme site. These would cease once the Scheme is built.

Legislation and Guidance

- 6.6. Guidance on air quality related to traffic emissions in the Maltese context is available in the following national legislation:
- **S.L. 549.59: Ambient Air Quality Regulations.**
- 6.7. For PM₁₀, the legislation sets an annual limit value of 40 µg/m³, and a daily limit value

¹⁸ Design Manual for Roads and Bridges (2007): Volume 11 Section 3.

of 50 $\mu\text{g}/\text{m}^3$ not to be exceeded more than 35 times in a calendar year.

- 6.8. The annual mean limit for NO_2 is 40 $\mu\text{g}/\text{m}^3$, whereas maximum hourly concentrations of NO_2 must not exceed 200 $\mu\text{g}/\text{m}^3$ – this value cannot be exceeded more than 18 times annually.

ASSESSMENT METHODOLOGY

- 6.9. A method statement was submitted to ERA on 4th February 2026, and the methodology was accepted by ERA, after revisions, on 13th March 2026. The final agreed method statement is included in **Technical Appendix I: Terms of Reference and Method Statements**.

Traffic Data

- 6.10. Traffic data for the Scheme has been calculated by Adi Associates Environmental Consultants Ltd.
- 6.11. The traffic figures used in this assessment are shown in **Table 6.1**; the corresponding roads are labelled in **Figure 6.1**. **Figure 6.1** shows the distribution of traffic from the Scheme and identifies the Area of Study.
- 6.12. The AADT for the Scheme was estimated at 4,950 vehicles¹⁹. The AADT calculations are included in **Technical Appendix 4: Air Quality Baseline Monitoring Data and Dispersion Model**.
- 6.13. The Area of Study was selected taking into account the trip distribution predicted in the Transport Impact Assessment, and taking note of the sensitive receptors located on the roads where the increase in AADT due to the Scheme is the highest.
- 6.14. Two traffic scenarios were considered for the years 2033 (base year) and 2038 (base year plus five years), namely the baseline scenario (Scenario 1), and the baseline plus the traffic generated as a result of the Scheme (Scenario 2).
- 6.15. The other approved major development affecting the roads in the Area of Study is the development at the Malta International Airport that has been included in Scenario 1.

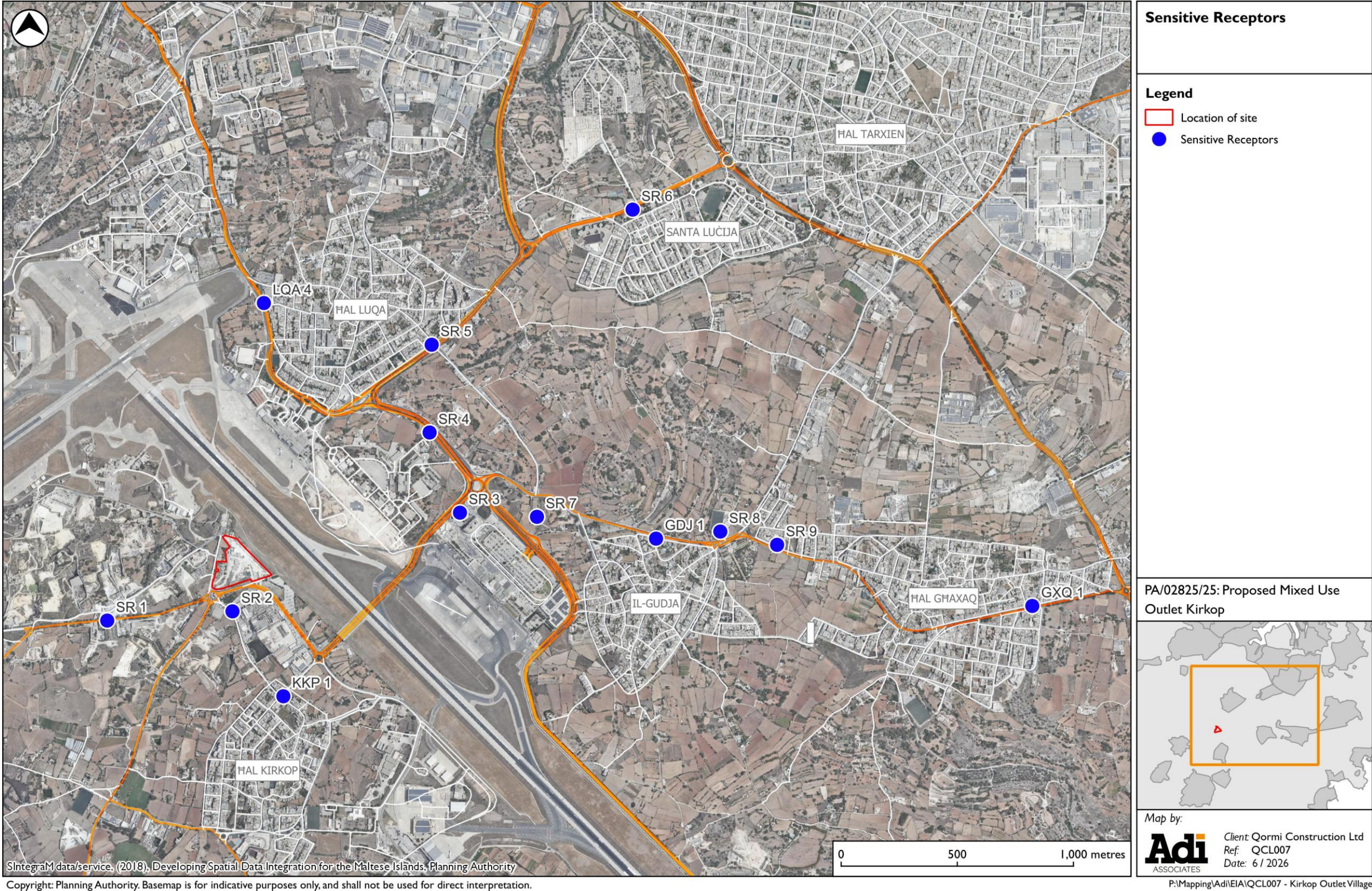
¹⁹ This value has been updated following submission of the Method Statement.

Table 6.1: Predicted traffic growth

Ref.	Road link (Figure 9.1)	Baseline AADT ²⁰ (2025)	Committed traffic from other approved projects	Scheme AADT	AADT (Base year) 2033		AADT (Base year + 5 years) 2038		% Heavy vehicles	Average vehicle speed (km/h)
					Scenario 1: Baseline	Scenario 2: Baseline + Scheme	Scenario 1: Baseline	Scenario 2: Baseline + Scheme		
SR1	Triq Valletta, Mqabba	11,496	221	724	12,669	13,393	13,304	14,028	7.1%	59.9
SR2	Triq Ir-Ramlija, Hal Kirkop	1,329	0	745	1,439	2,184	1,513	2,258	11.4%	44.8
SR3	Triq L-Ewwel Titjira, Hal Luqa	47,468	777	3,979	52,178	56,157	54,800	58,779	6.5%	54.8
SR4	Vjal L-Avjazzjoni, Hal Luqa	79,876	12,946	2,060	99,441	101,501	103,853	105,913	6.9%	57.6
SR5	Triq Il-Kunsill Tal-Ewropa, Hal Luqa	71,889	7,020	1,159	84,866	86,025	88,837	89,996	6.9%	60.6
SR6	Triq Hal Luqa, Santa Lucija	9,712	429	811	10,946	11,757	11,482	12,293	6.3%	62.1
SR7	Bir Miftuh Chapel, Gudja	26,224	3,010	1,740	31,407	33,147	32,856	34,596	7.7%	42.6
SR8	Gudja FC football pitch, Gudja	29,000	3,010	1,341	34,413	35,754	36,015	37,356	7.7%	37.9
SR9	Triq Hal Ghaxaq, Gudja	20,450	2,492	940	24,637	25,577	25,767	26,707	6.5%	36.6
KKP1	Triq Valletta, Hal Kirkop	3,212	83	149	3,561	3,710	3,738	3,887	7.2%	30.5
LQA4	Triq San Tumas, Hal Luqa	24,842	5,681	504	32,581	33,085	33,953	34,457	7.0%	53.5
GDJ1	Dawret Il-Gudja, Gudja	26,224	3,010	1,540	31,407	32,947	32,856	34,396	7.7%	52.2
GXQ1	Dawret Hal Ghaxaq, Hal Ghaxaq	19,715	2,308	626	23,656	24,282	24,745	25,371	6.5%	41.0

²⁰ Annual average daily traffic.

Figure 6.1: Area of Study and Sensitive Receptors



Baseline Air Quality

- 6.16. Knowledge of the current baseline air quality is principally required in order to calibrate the air dispersion model (as requested by ERA); dispersion modelling is used to predict future air quality at the Scheme and at the nearest sensitive receptors, both without and with the Scheme.
- 6.17. A site visit was carried out on 2nd February 2026, to identify a suitable monitoring location. The most appropriate location for the baseline monitoring survey was identified on Triq L-Avjazzjoni, as shown in **Figure 6.2**. This point lies on the route that most vehicles will take leaving the Scheme site and was selected due to the prevailing north-westerly wind direction and traffic patterns. Positioning the sampler at this location maximizes exposure to emissions in line with natural airflow patterns, capturing representative baseline data for the study. The equipment was placed at a distance of not more than 5 m from the edge of Triq L-Avjazzjoni (as shown in **Figure 6.2**), which is a trafficked road that will likely experience the highest increases in AADT from the Scheme. Consideration was also given to other factors including the following:
- provision of electricity supply;
 - site accessibility and safety / security;
 - distance from the edge of a road junction and traffic lights; and
 - monitoring location not screened from the road by trees or trucks.
- 6.18. Monitoring was carried out for six / seven weeks, on the following days:
- NO₂: From 25th March 2026 to 12th May 2026;
 - PM₁₀: From 25th March 2026 to 19th May 2026.
- 6.19. NO₂ was measured using Passam NO₂ passive diffusion monitoring tubes. The equivalence of Passam tubes to the standard chemiluminescence test according to EN 14211:2012 was demonstrated by Pfeffer et al. (2010)²¹. The tubes were supplied by Passam ag, a laboratory accredited to ISO/IEC 17025:2017 and later returned for analysis. The analysis is specifically accredited.
- 6.20. Measurement of PM₁₀ was carried out in accordance with the reference method EN 12341: 2014. Sampling was carried out using low-volume samplers equipped with a size selective inlet and drawing in ambient air with a constant flow rate of 2.3 m³/h over a period of 24 hours per sample. The samplers are reference samplers for PM₁₀ according to EN 12341; their calibration certificates are included in **Technical Appendix 4: Air Quality Baseline Monitoring Data and Dispersion**
-

²¹ Pfeffer et al. (2010). Calibration of diffusive samplers for nitrogen dioxide using the reference method – Evaluation of measurement uncertainty. *Gefahrstoffe- Reinhaltung der Luft*, 11-12, 500-506.

Model. Samples were collected on pre-weighed quartz / glass fibre filters supplied by a laboratory accredited to EN ISO IEC 17025 and for gravimetric analysis. After sampling, the filters were conditioned and weighed at the same laboratory.

- 6.21. The most recent NO₂ data from ERA's diffusion tubes in the Area of Study (KKPI, GDJI, GXQI, and LQA4, as shown in **Figure 6.1**) were also considered as part of the study.

Figure 6.2: Air quality baseline monitoring location



Figure 6.3: Sampler placement



Modelling

Dispersion Model

- 6.22. BREEZE Roads was used to model emissions of NO₂ and PM₁₀ from traffic under baseline conditions and the operational phase. The reference years during operation were the base year (2027) and base year plus five years (2032).

Background Values

- 6.23. Urban background values are required since BREEZE Roads only predicts impacts on air quality occurring due to the emissions from traffic included in the model. These traffic emissions then need to be added to background air quality levels to predict the overall level of emissions.
- 6.24. The NO₂ background concentration is 17.6 µg/m³, while the PM₁₀ background is 25.7 µg/m³; this data has been provided by ERA.
- 6.25. The background will be assumed to remain constant throughout the years modelled.

Traffic Emission Factors

- 6.26. Emission factors are required to predict emission from future vehicle fleet compositions. It was assumed that vehicle emissions rates are similar to those in the UK and hence the same emission factors were used. These factors are based on a toolkit published by Defra²² that mirrors the past and present vehicle fleet in the UK. The factors were adjusted to the Maltese scenario in line with the age distribution of the Maltese fleet and taking into consideration the percentage HGVs and average vehicle speed applicable to the specific road under assessment.²³
- 6.27. The UK average vehicle age is 8 years, compared to Malta's 15 years (as per NSO data²⁴). This implies that currently, the Maltese emission factors are 7 years behind those of the UK. Therefore, the emission factors of the current fleet are equivalent to the UK emission factors of 2017.
- 6.28. The assessment considered a scenario where the average vehicle age has remained 15 years. The percentage of the predicted concentration of NO_x that is in the form of NO₂ was estimated using UK guidance²⁵ that takes account of the prevailing

²² The toolkit makes use of emission factors published by the UK Department for Transport (derived from actual vehicle emissions) together with information on fleet composition on different road types. The toolkit is developed by the Highways Agency, AEA, Bureau Veritas and Air Quality Consultants, together with contributions from CERC.

²³ Any possible remaining differences with regard to the Maltese fleet (in comparison to the Defra toolkit) are taken account of in the calibration factor used to bring the predictions in line with the measured data.

²⁴ NSO (2020), *Transport Statistics 2019*

https://nso.gov.mt/en/publicatons/Publications_by_Unit/Documents/B3_Environment_Energy_Transport_Agriculture_Statistics/Transport_Statistics_2019.pdf, Table 3.47.

²⁵ Defra. *Local Air Quality Management (LAQM) Support*. <http://laqm.defra.gov.uk/>.

background pollutant concentrations.

Meteorological Data

- 6.29. Meteorological data for the most recent full year available (2025) was obtained from the Malta International Airport.

Sensitive Receptors

- 6.30. As mentioned, the Area of Study has been selected taking note of the sensitive receptors located along the route where the increase in AADT due to the Scheme site is the highest.
- 6.31. The principal air sensitive receptors in the Area of Study, taking into account the applicability of air quality objectives (as per UK guidance²⁶) are shown in **Table 6.2** and **Figure 6.1**. It is noted that although each sensitive receptor is marked as a point on the road, the result of the modelling would be representative of the entire stretch of the road where traffic is constant. Additionally, in selecting the individual points, the distance from the edge of the road was considered, and preference was given to the point located closer to the road centre. Therefore, the receptor points selected are representative of the entire stretch of the road where traffic is constant, and the worst-case in terms of distance from the road has been included.

Table 6.2: Air sensitive receptors

Name	Type
GDJ 1	Residences
GXQ 1	Residences
KKP 1	Residences
LQA 4	Shops
SR 1	Bus stop
SR 2	Bus stop
SR 3	Playground
SR 4	Bus Stop
SR 5	Residences
SR 6	Public Garden
SR 7	Chapel
SR 8	Football pitch

Model Calibration

- 6.32. The model was calibrated against the monitoring data, in accordance with ERA

²⁶ Defra (2018) *Local Air Quality Management Technical Guidance LAQM.TG16*
<https://laqm.defra.gov.uk/documents/LAQM-TG16-February-18-v1.pdf> (Box 1.1).

guidance. This aims to ensure that the resulting total concentration (road traffic plus background) matches the measured concentration at a location that is similar to where predictions are being made.

- 6.33. Provided that the model calibration factor used is appropriate for the location of the development, and for future years, this method will provide reliable estimates of the impacts on air quality from the Scheme and reduces uncertainties.

BASELINE AIR QUALITY

Monitoring Data

- 6.34. The results of the monitoring over the six / seven-week period are presented in **Technical Appendix 4: Air Quality Baseline Monitoring Data and Dispersion Model**, and yielded an average of:
- NO₂: 32.1 µg/m³; and
 - PM₁₀: 33.2 µg/m³.
- 6.35. During the survey period, 10 episodes exceeding the PM₁₀ daily limit value of 50 µg/m³ were recorded. These exceedances were caused by Saharan Dust episodes identified and confirmed by ERA, with a total of 10 Saharan Dust events observed on 12-14 April and 6-10 and 15-16 May 2026. In accordance with the assessment methodology, these episodes were discarded from the analysis due to their natural contribution to elevated PM₁₀ concentrations. Following the exclusion of these events, the study retained 43 valid samples for assessment.
- 6.36. Using the scaling factors provided by ERA²⁷, the following annual averages were calculated:
- NO₂: 34.7 µg/m³; and
 - PM₁₀: 38.5 µg/m³.
- 6.37. By comparison, the annual limit value for NO₂ and PM₁₀ is 40 µg/m³. Therefore, the measured data indicates that the monitoring location is compliant with the annual limit values for NO₂ and PM₁₀.
- 6.38. For NO₂ it is assumed that if the annual mean limit value is not exceeded, then the short-term limit value, which allows for 18 exceedances of 200 µg/m³ as an hourly mean, will also be achieved. Therefore, since the annual mean limit value is not exceeded, it is assumed that the allowed number of hourly exceedances is not exceeded either.
- 6.39. To predict whether the allowed number of daily exceedances of the PM₁₀ limit value

²⁷ E-mail from ERA dated 16th June 2026. NO₂ factor: 1.08; PM₁₀ factor: 1.16.

is exceeded, an equation provided by ERA²⁸ was used. This gives a calculated 90.4th percentile of 56.2 µg/m³, which indicates that at the monitoring location under baseline conditions, the 35 allowed number of exceedances are exceeded.

- 6.40. The most recent available data from ERA's NO₂ diffusion tubes in the Area of Study is presented in **Table 6.3**. A review of the data and the dispersion model, shows that the values for KKPI and GDJI are within the 20% range, whereas the measured concentrations at GXQI and LQA4, which appear unusually high, are above the 20% range compared to the modelled concentrations.

Table 6.3: ERA NO₂ diffusion tube data

Code (Figure 6.1)	NO ₂ 2025 annual average (µg/m ³)
KKPI	19.0 ug/m ³
GDJI	27.4 ug/m ³
GXQI	42.2 ug/m ³
LQA4	50.7 ug/m ³

Background Data

- 6.41. The background values used in the dispersion model (obtained as explained above) were as follows:
- NO₂: 17.6 µg/m³; and
 - PM₁₀: 25.7 µg/m³.
- 6.42. The background values are compliant with the annual and hourly limits for NO₂, and the annual and daily limits for PM₁₀.

Model Calibration

- 6.43. The outputs of the dispersion model were added to the background values, and the results calibrated against the baseline monitoring data.
- 6.44. A calibration factor of 6 was used for NO₂ and 3.8 for PM₁₀. The outputs of the dispersion model were added to the background values, and the results calibrated against the baseline monitoring data.
- 6.45. The output of the calibrated model fits well with the measured data and is well within

²⁸ PCT = (1.46 × CAA) + 0.03, where:

- PCT = 90.4th percentile of the daily PM₁₀ averages (an indicator of the number of exceedances of the PM₁₀ daily limit value); and
- CAA = Annual PM₁₀ average.

the 20% threshold stipulated by ERA, as shown in **Table 6.4**.

Table 6.4: Comparison of calibrated model with measured data

Monitoring point (Figure 6.2)	Parameter	Measured concentration ($\mu\text{g}/\text{m}^3$)	Predicted concentration ($\mu\text{g}/\text{m}^3$)	Difference
Baseline study	NO ₂	34.7	34.7	0%
	PM ₁₀	38.5	38.4	-0.2%

DETERMINING IMPACT SIGNIFICANCE

- 6.46. The significance criteria in **Table 6.5** and **Table 6.6** were used to assess the significance of impacts arising from traffic generated by the Scheme on air quality.

Table 6.5: Criteria of significance: NO₂/PM₁₀ annual levels

Baseline annual levels of NO ₂ /PM ₁₀	Change in annual NO ₂ /PM ₁₀ levels due to Scheme			
	$\leq 0.4 \mu\text{g}/\text{m}^3$	≥ 0.8 to $< 2 \mu\text{g}/\text{m}^3$	≥ 2.4 to $< 4.0 \mu\text{g}/\text{m}^3$	$> 4.0 \mu\text{g}/\text{m}^3$
$\geq 44 \mu\text{g}/\text{m}^3$	Moderate	Substantial	Substantial	Substantial
41.2 to 43.6 $\mu\text{g}/\text{m}^3$	Moderate	Moderate	Substantial	Substantial
38.0 to 40.8 $\mu\text{g}/\text{m}^3$	Slight	Moderate	Moderate	Substantial
30.4 to 37.6 $\mu\text{g}/\text{m}^3$	Negligible	Slight	Moderate	Moderate
$\leq 30 \mu\text{g}/\text{m}^3$	Negligible	Negligible	Slight	Moderate

Table 6.6: Criteria of significance: PM₁₀ daily limit exceedances

Baseline PCT ²⁹	Change in PCT due to Scheme			
	$\leq 0.5 \mu\text{g}/\text{m}^3$	1.0 to 2.5 $\mu\text{g}/\text{m}^3$	3.0 to 5.0 $\mu\text{g}/\text{m}^3$	$> 5.0 \mu\text{g}/\text{m}^3$
$\geq 55 \mu\text{g}/\text{m}^3$	Moderate	Substantial	Substantial	Substantial
51.5 to 54.5 $\mu\text{g}/\text{m}^3$	Moderate	Moderate	Substantial	Substantial
47.5 to 51.0 $\mu\text{g}/\text{m}^3$	Slight	Moderate	Moderate	Substantial
38.0 to 47.0 $\mu\text{g}/\text{m}^3$	Negligible	Slight	Moderate	Moderate
$\leq 37.5 \mu\text{g}/\text{m}^3$	Negligible	Negligible	Slight	Moderate

²⁹ PCT: 90.4th percentile of the daily PM₁₀ averages.

ASSESSMENT OF IMPACTS

- 6.47. **Table 6.7** to **Table 6.9** compare the predicted air quality in 2033 and 2038 at the sensitive receptors in the baseline scenario (Scenario 1, without the Scheme) to the air quality with the Scheme (Scenario 2).
- 6.48. The data is based on the calibrated model and includes background air quality levels. The output of the dispersion model is presented in **Technical Appendix 4: Air Quality Baseline Monitoring Data and Dispersion Model**.
- 6.49. The results show that the impact from Scheme traffic on NO₂ annual ambient air concentrations, using the significance criteria provided by ERA, is negligible under all scenarios considered (**Table 6.7**). Additionally, since the annual mean limit value of 40 µg/m³ for NO₂ is not exceeded under any scenario, it is likely that the allowed number of hourly exceedances will not be exceeded either.
- 6.50. With respect to PM₁₀ ambient air concentrations, the results show that the impact from Scheme traffic on the PM₁₀ annual average is negligible under all scenarios considered with the exception of SR3, which is slight (see **Table 6.8**). With regards to the daily limit, **Table 6.9** shows that there are some moderate impacts at sensitive receptors 3, 4, and 5 and a slight impact at receptor GDJ 1; the remaining receptors have a negligible impact under both scenarios.

Table 6.7: Predicted NO₂ annual average concentrations (µg/m³)

Year:	2033 (base year of operation)				2038 (base year + 5 years)			
Receptor	Baseline	Baseline plus Scheme	Change as a result of Scheme	Impact	Baseline	Baseline plus Scheme	Change as a result of Scheme	Impact
SR1: Bus stop; Triq Valletta, Mqabba	23.8	24.0	0.2	Negligible	21.8	21.9	0.1	Negligible
SR2: Bus stop; Triq Ir-Ramlja, Hal Kirkop	21.0	21.3	0.3	Negligible	20.3	20.5	0.2	Negligible
SR3: Playground; Triq L-Ewwel Titjira, Hal Luqa	29.1	29.6	0.5	Negligible	24.7	24.9	0.2	Negligible
SR4: Bus Stop; Vjal L-Avjazzjoni, Hal Luqa	33.5	33.8	0.3	Negligible	27.2	27.3	0.1	Negligible
SR5: Residences; Triq Il-Kunsill Tal-Ewropa, Hal Luqa	32.6	32.8	0.2	Negligible	26.7	26.8	0.1	Negligible
SR6: Public Garden; Triq Hal Luqa, Santa Lucija	22.5	22.7	0.2	Negligible	21.1	21.2	0.1	Negligible
SR7: Chapel; Bir Miftuħ Chapel, Gudja	26.1	26.3	0.2	Negligible	23	23.1	0.1	Negligible
SR8: Football pitch; Gudja FC football pitch, Gudja	23.8	24.0	0.2	Negligible	21.7	21.8	0.1	Negligible
SR9: Residences; Triq Hal Għaxaq, Gudja	26.1	26.4	0.3	Negligible	22.9	23.1	0.2	Negligible
KKPI: Residences; Triq Valletta, Hal Kirkop	21.0	21.0	0	Negligible	20.3	20.3	0	Negligible
LQA4: Shops; Triq San Tumas, Hal Luqa	29.1	29.2	0.1	Negligible	24.6	24.7	0.1	Negligible
GDJI: Residences; Dawret Il-Gudja, Gudja	28.0	28.3	0.3	Negligible	24	24.2	0.2	Negligible
GXQI: Residences; Dawret Hal Għaxaq, Hal Għaxaq	26.2	26.3	0.1	Negligible	23	23	0	Negligible

Table 6.8: Predicted PM₁₀ annual average concentrations (µg/m³)

Year:	2033 (base year of operation)				2038 (base year + 5 years)			
Receptor	Baseline	Baseline plus Scheme	Change as a result of Scheme	Impact	Baseline	Baseline plus Scheme	Change as a result of Scheme	Impact
SR1: Bus stop; Triq Valletta, Mqabba	29.1	29.2	0.1	Negligible	29.1	29.3	0.2	Negligible
SR2: Bus stop; Triq Ir-Ramlija, Hal Kirkop	26.6	26.8	0.2	Negligible	26.6	26.9	0.3	Negligible
SR3: Playground; Triq L-Ewwel Titjira, Hal Luqa	34.2	34.8	0.6	Negligible	34.4	34.9	0.5	Negligible
SR4: Bus Stop; Vjal L-Avjazzjoni, Hal Luqa	39.2	39.5	0.3	Slight	39.5	39.8	0.3	Slight
SR5: Residences; Triq Il-Kunsill Tal-Ewropa, Hal Luqa	38.2	38.4	0.2	Negligible	38.5	38.6	0.1	Negligible
SR6: Public Garden; Triq Hal Luqa, Santa Lucija	28.0	28.1	0.1	Negligible	28.0	28.2	0.2	Negligible
SR7: Chapel; Bir Miftuh Chapel, Gudja	31.2	31.3	0.1	Negligible	31.3	31.4	0.1	Negligible
SR8: Football pitch; Gudja FC football pitch, Gudja	28.8	28.9	0.1	Negligible	28.8	28.9	0.1	Negligible
SR9: Residences; Triq Hal Ghaxaq, Gudja	30.7	30.9	0.2	Negligible	30.7	30.8	0.1	Negligible
KKPI: Residences; Triq Valletta, Hal Kirkop	26.6	26.6	0	Negligible	26.6	26.6	0	Negligible
LQA4: Shops; Triq San Tumas, Hal Luqa	34.1	34.2	0.1	Negligible	34.1	34.3	0.2	Negligible
GDJ1: Residences; Dawret Il-Gudja, Gudja	32.9	33.2	0.3	Negligible	33.0	33.3	0.3	Negligible
GXQ1: Residences; Dawret Hal Ghaxaq, Hal Ghaxaq	30.8	31.0	0.2	Negligible	30.9	31.0	0.1	Negligible

Table 6.9: Predicted PM₁₀ 90.4th percentile of daily PM₁₀ levels (µg/m³)³⁰

Year:	2033 (base year of operation)				2038 (base year + 5 years)			
Receptor	Baseline	Baseline plus Scheme	Change as a result of Scheme	Impact	Baseline	Baseline plus Scheme	Change as a result of Scheme	Impact
SR1: Bus stop; Triq Valletta, Mqabba	42.5	42.7	0.2	Negligible	42.5	42.8	0.3	Negligible
SR2: Bus stop; Triq Ir-Ramlja, Hal Kirkop	38.9	39.2	0.3	Negligible	38.9	39.2	0.3	Negligible
SR3: Playground; Triq L-Ewwel Titjira, Hal Luqa	50.0	50.8	0.8	Moderate	50.2	50.9	0.7	Moderate
SR4: Bus Stop; Vjal L-Avjazzjoni, Hal Luqa	57.3	57.7	0.4	Moderate	57.7	58.1	0.4	Moderate
SR5: Residences; Triq Il-Kunsill Tal-Ewropa, Hal Luqa	55.8	56.1	0.3	Moderate	56.2	56.5	0.3	Moderate
SR6: Public Garden; Triq Hal Luqa, Santa Lucija	40.9	41.1	0.2	Negligible	41.0	41.2	0.2	Negligible
SR7: Chapel; Bir Miftuħ Chapel, Gudja	45.5	45.8	0.3	Negligible	45.7	45.9	0.2	Negligible
SR8: Football pitch; Gudja FC football pitch, Gudja	42.0	42.2	0.2	Negligible	42.1	42.3	0.2	Negligible
SR9: Residences; Triq Hal Ghaxaq, Gudja	44.8	45.1	0.3	Negligible	44.8	45.0	0.2	Negligible
KKPI: Residences; Triq Valletta, Hal Kirkop	38.8	38.9	0.1	Negligible	38.8	38.9	0.1	Negligible
LQA4: Shops; Triq San Tumas, Hal Luqa	49.8	50.0	0.2	Negligible	49.9	50.1	0.2	Negligible
GDJI: Residences; Dawret Il-Gudja, Gudja	48.1	48.6	0.5	Slight	48.2	48.6	0.4	Slight
GXQI: Residences; Dawret Hal Ghaxaq, Hal Ghaxaq	45.1	45.3	0.2	Negligible	45.1	45.3	0.2	Negligible

³⁰ Using the equation provided by ERA: PCT = (1.46×CAA) + 0.03.

- 6.51. Contour plots for the NO_2 and PM_{10} annual average predictions for the year 2033 are shown in **Figures 6.4 to 6.8**. The full set of contour plots is found in **Technical Appendix 4: Air Quality Baseline Monitoring Data and Dispersion Model**.

Figure 6.4: Contour plot (NO_2 annual average, baseline without Scheme 2033)

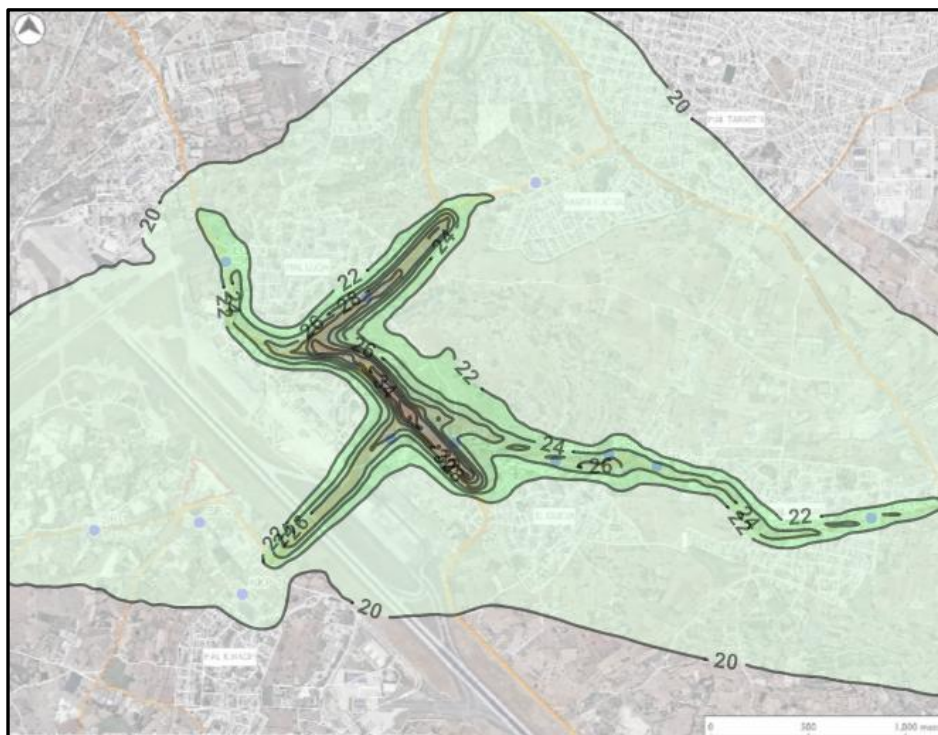


Figure 6.5: Contour plot (NO_2 annual average, Scheme 2033)

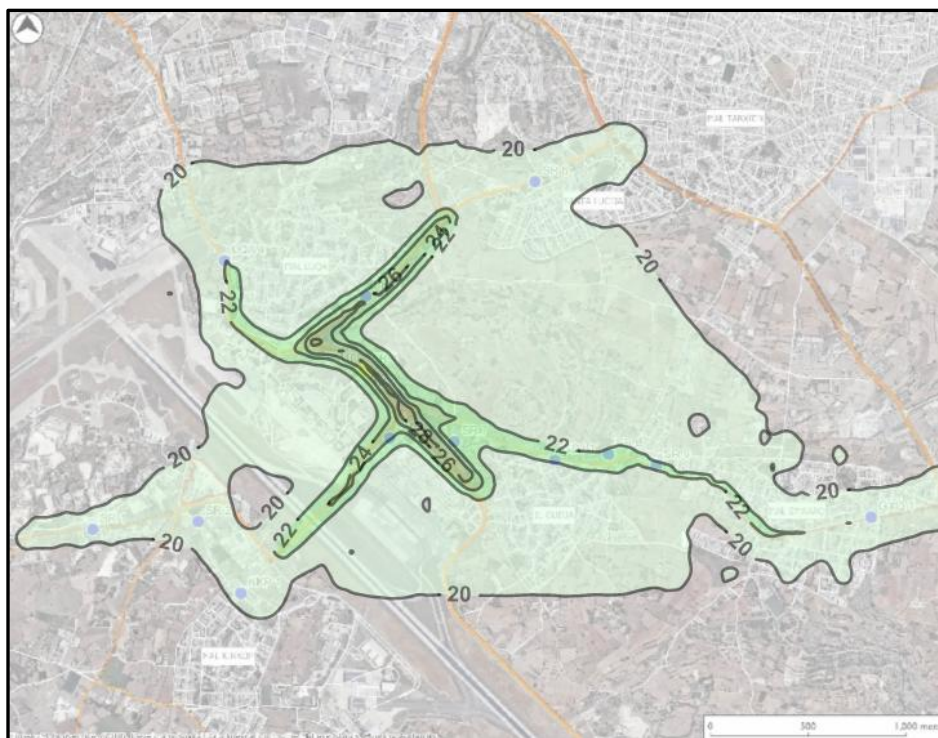


Figure 6.6: Contour plot (PM_{10} annual average, baseline without Scheme 2033)

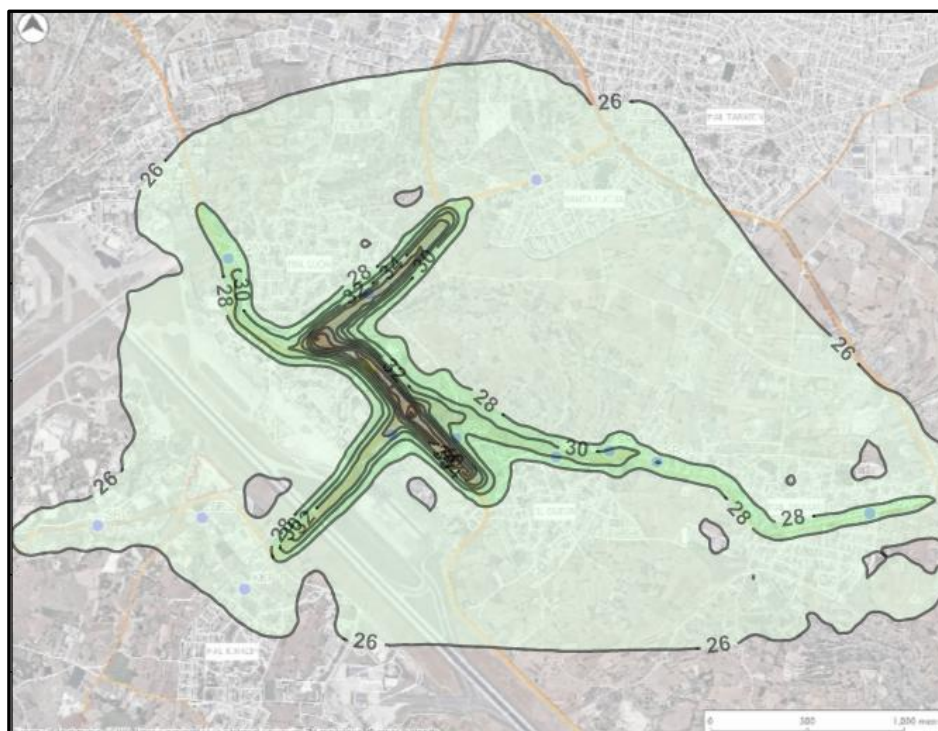
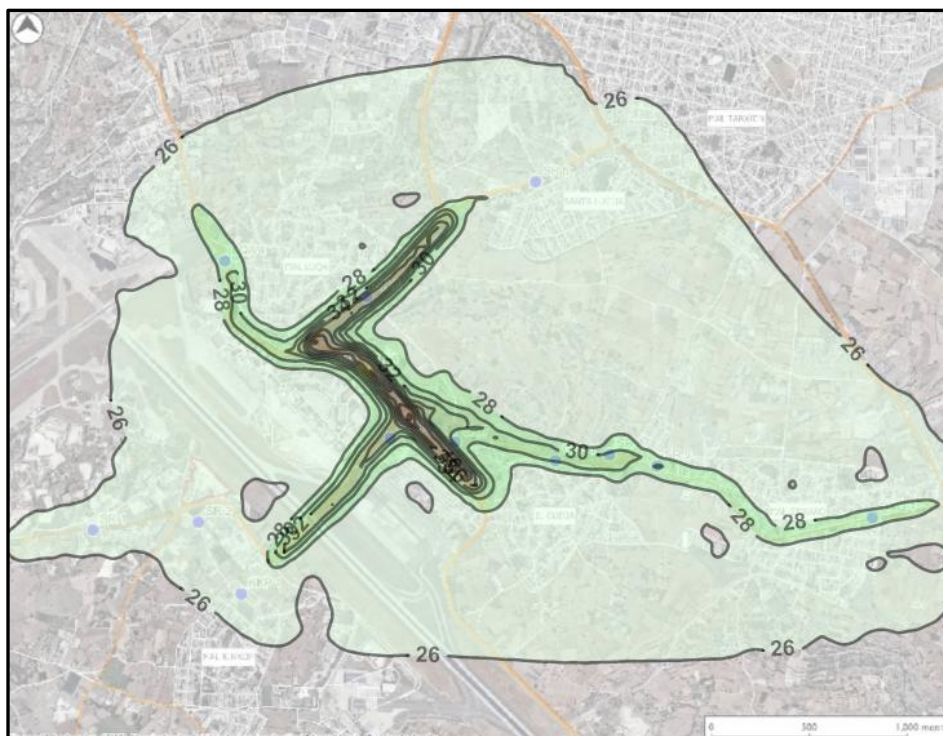


Figure 6.7: Contour plot (PM_{10} annual average, with Scheme 2033)



MITIGATION

- 6.52. Since the results show a negligible to moderate impact on ambient air quality, it is recommended that a Green Travel Plan is implemented for the operation of the Scheme.

RESIDUAL IMPACTS

- 6.53. The residual impacts following the implementation of the Green Travel Plan would depend on the effectiveness of the implementation of the Plan measures.
- 6.54. Impacts on air quality are summarised in **Table 6.10**.

Table 6.10: Summary of impacts on air quality

Predicted Impact	Beneficial / Adverse / Neutral	Nature, scale and type of impact						Policy importance	Probability of impact occurring	Significance of impact	Proposed mitigation measures	Significance of residual impact
		Const'n / Oper'n	Extent of impact (Nat / Local / Site)	Direct / Indirect	S-term / L-term	Perm / Temp	Revers / Irrevers	(Internat. / National / Local)	(Likely / Unlikely / Remote / Uncertain)	(Major / Moderate / Minor / Not significant)		(Major / Moderate / Minor / Not significant)
Impact of vehicle emissions on sensitive receptors – change in NO ₂ annual average	Neutral	Oper'n	Local	Direct	L-term	Perm	Revers	National	Likely	Not significant	None	Not significant
Impact of vehicle emissions on sensitive receptors – change in PM ₁₀ annual average	Adverse	Oper'n	Local	Direct	L-term	Perm	Revers	National	Likely	Not significant to slight	None	Not significant to slight
Impact of vehicle emissions on sensitive receptors – change in number of daily PM ₁₀ exceedances	Adverse	Oper'n	Local	Direct	L-term	Perm	Revers	National	Likely	Not significant to moderate	Green Travel Plan for the Scheme operation	Not significant to moderate

7. CULTURAL HERITAGE

INTRODUCTION

- 7.1. This chapter describes the cultural heritage with reference to the Scheme site and wider Area of Influence (A of I). The potential key issues with regards to cultural heritage are:

Key Issues:

- **Loss or damage to features of cultural heritage significance**
- **Alteration or degradation of the quality of the setting of the features of cultural heritage significance as a result of the Scheme**

Terms of Reference

- 7.2. The Terms of Reference provided by ERA are provided in **Technical Appendix I: Terms of Reference and Method Statements**.

ASSESSMENT METHODOLOGY

Objectives of the Assessment

- 7.3. The objectives of the cultural heritage desktop study were to:
- Identify, document, and present information on the known archaeological and cultural heritage features within the Area of Influence (A of I);
 - Identify the potential for additional archaeological remains within the A of I, from desk study research;
 - Assess the cultural heritage significance of the A of I;
 - Describe and assess the impact of the Scheme on the archaeological and cultural heritage features within the A of I;
 - Describe any mitigation measures designed to minimise any adverse impacts on the archaeological and cultural heritage features within the A of I; and
 - Describe appropriate monitoring measures to safeguard archaeological and cultural heritage features during the construction and operation of the Scheme.

Standards and Policy Guidance

International Legislation

- 7.4. From an international perspective, there is one primary convention relevant to the cultural heritage study: the *European Convention on the Protection of the Archaeological Heritage (Revised) Valletta, 1992*. Malta signed this Convention in 1992 and ratified it

in 1994. Most of this Convention is not directly related to the context of this study and would prove too lengthy to reproduce here. It can be downloaded using this link: <http://conventions.coe.int/treaty/en/treaties/html/143.htm>.

National Policy and Legislation

- 7.5. Guidance on the protection of cultural heritage in the context of planning was taken from the *Cultural Heritage Act 2002*, and the urban conservation and archaeology policies of the former *Structure Plan for the Maltese Islands 1992*³¹.

Cultural Heritage Act, 2002

- 7.6. This Act provides overall protection to all “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 (section 2)”. It also includes “archaeological, palaeontological or geological sites and deposits, landscapes, groups of buildings...which have an historical value”. In Section 3, it also specifies that “For the purposes of this Act, an object shall not be deemed to form part of the cultural heritage unless it has existed in Malta, including the territorial waters thereof, or in any other country, for fifty years, or unless it is an object of cultural, artistic, historical, ethnographic, scientific or industrial value, even if contemporary, that is worth preserving”.
- 7.7. Furthermore, “No person shall make any interventions on such cultural property or classes thereof without first having obtained a permit therefore from the Superintendent” (Section 44.3). Applications are determined subject to the results of prior investigation: “Before determining an application under sub-article (3) hereof the Superintendent may require such information including the results of such tests, examinations or inspection by such persons accredited under this Act for the purpose as may be required by the Superintendent” (Section 44.4).
- 7.8. The restrictions on archaeological excavations are stated in Section 43(1), whereby “Archaeological or palaeontological excavations or explorations on land as well as in the territorial waters or in the contiguous zone of Malta can only be made by the Superintendent, or with written permission of the Superintendent”. Chance discoveries of archaeological remains are also regulated by Section 43(2): “Any person who, even accidentally, discovers any object, site or building to which this Act applies in accordance with article 3, shall immediately inform the Superintendent, keep the object found in situ, and shall not for a period of six working days after informing the Superintendent proceed with any work on the site where the object of cultural property is discovered”. The details regarding rights and obligations by all parties in the eventuality of an archaeological

³¹ The *Structure Plan for the Maltese Islands 1992* has been superseded by the *Strategic Plan for the Environment and Development 2015* (SPED); however, the SPED does not outline policy guidance for cultural heritage in the level of detail that it was outlined in the Structure Plan. In the absence of specific policy guidance, and specifically in respect of the classification of cultural heritage features, reference is still made to the relevant policies of the Structure Plan.

discovery are described in Sections 43(3), 43(4), 43(5), 43(6), and 43(7).

Structure Plan Policies

- 7.9. The *Structure Plan for the Maltese Islands, 1992* contains policies relating to the classification of archaeological features. The classification system is outlined in **POLICY ARC 2** and **POLICY ARC 3**; **POLICY ARC 6** and **POLICY ARC 7** provide further guidance on the classification system.
- 7.10. **POLICY ARC 2** provides for a four-tier classification system, with Class A representing the most important sites / features, where development that is considered would adversely affect the natural setting of the site / feature will not be allowed. The policy prescribes a development-free buffer zone of at least 100 m around the periphery of a Class A site / feature. Class B sites / features are regarded as very important, to be preserved at all costs, where adequate measures must be taken to preclude any damage from immediate development. In the case of Class C sites / features, every effort must be made for preservation, but these features may be covered up after proper investigation, documentation and cataloguing, with provision for subsequent access being provided. Class D features are those of which there are numerous examples; these features may be covered up or destroyed after recording.
- 7.11. Permissible effects of development on archaeological remains are addressed in **POLICY ARC 3**: “... *development affecting ancient monuments and important archaeological areas and sites, including areas and sites having such potential, will normally be refused if there is an overriding case for preservation. Where there is no overriding case for preservation, development of such sites will not normally be permitted until adequate opportunities have been provided for the recording and, where desirable, the excavation of such sites*”.
- 7.12. As provided by **POLICY ARC 7**, any catalogued archaeological feature may be included in the National Protective Inventory (NPI), for which protection is provided by means of **POLICY ARC 6**.
- 7.13. The Structure Plan is weak on the protection of individual archaeological artefacts; the principal thrust of the Structure Plan is to protect sites, buildings and monuments. Artefacts are afforded better protection under the *Cultural Heritage Act*.

Policy Importance of Archaeological Features

- 7.14. The classification of archaeological features according to their policy importance is guided by legislation, including the *Cultural Heritage Act 2002*, the *Environment Protection Act 2016*, the Structure Plan policies, and Government and / or Legal Notices regarding specific archaeological and cultural heritage features. Each of these assigns its own degree of importance and remedies. In applying these to the EIA process three categories are used:
 - Features of International Importance (major importance);
 - Features of National Importance (major importance); and

- Features of Local Importance (minor importance).

7.15. **Table 7.** summarises the cultural significance of different features.

Table 7.1: Protection Ratings and Cultural Significance

Cultural Significance	Class	Grade	Protection
Major <i>National Importance</i>	A	1	Conserve, plus 100 m buffer zone
Medium <i>Local Importance</i>	B	2	Conserve
Minor	C	3	Record / may be covered
None	D	-	May be covered, destroyed, or recycled
Uncertain	E	-	Further investigation is required

7.16. The laws, policies, classification systems, etc., pertaining to the conservation of buildings or other structures have been assigned to these categories of policy importance as follows:

Features of International Importance

7.17. Cultural features of international importance are those:

- Protected specifically by legislation;
- Qualifying as Class A features under Structure Plan **POLICY ARC 2**; or
- Similarly identified by the Minister responsible for cultural heritage or the Superintendence of Cultural Heritage.

Features of National Importance

7.18. Features of international importance would also be of national importance. Additionally, cultural features of national importance are those:

- Qualifying as Class B features under Structure Plan **POLICY ARC 2**; or
- Similarly identified by the Minister responsible for cultural heritage or the Superintendence of Cultural Heritage.

Features of Local Importance

7.19. Cultural features of local importance are those:

- Qualifying as Class C or Class D features under Structure Plan **POLICY ARC 2**; or
- Similarly identified by the Minister responsible for cultural heritage or the Superintendence of Cultural Heritage.

Remaining Features

- 7.20. All catalogued cultural heritage features may be included in the NPI, and those not already protected are afforded protection under Structure Plan **POLICY ARC 6**, which provides that all sites / features listed in the NPI will be protected in accordance with the Environment and Development Planning Act (now the Environment Protection Act and the Development Act) powers and by reference to the classification ratings outlined in Structure Plan **POLICY ARC 2**.

Area of Influence

- 7.21. The Area of Influence (A of I) used for the terrestrial cultural heritage study is illustrated in **Figure 7.1**. The extent of the A of I was agreed with the Superintendence of Cultural Heritage (SCH).

Methodology

- 7.22. The methodology for the cultural heritage study consisted of a baseline research-based survey of the cultural heritage assets of the Area of Influence based on published data, as well as field data collected by the present Consultants for previous EIAs at the same location and an evaluation of their importance.

Literature Search

- 7.23. The literature search included primary and secondary sources: analysis of cartographic and photographic material; analysis of secondary written sources; and analysis of conservation legislation.

Mapping

- 7.24. The archaeological, rural, vernacular, historical, and cultural heritage features within the A of I were mapped primarily through consultation of documentary sources supplemented by fieldwork.

Evaluation

- 7.25. An archaeological assessment of the significance of the archaeological, rural, vernacular, historical, and cultural heritage features was undertaken. The conservation importance of the identified sites / features has been identified with reference to relevant legislation standards, guidance, and practices, as described above.

Figure 7.1: Area of Influence for Cultural Heritage Study



HISTORICAL CONTEXT OF THE AREA

Historical Importance of the Area

- 7.26. The Cultural Heritage Study notes that the area of the Scheme site is surrounded by a number of cultural features, some of which are quite unique and particular reflecting the gradual and largely spontaneous development of the settlement of Ħal Kirkop, mostly originating from a small number of houses and hamlets established along the crossroads connecting several neighbouring and larger villages. These routes linked Mqabba to the northwest, Luqa to the north, Gudja to the northeast, and Qrendi and Żurrieq to the southwest. The convergence of these roads at the centre of Ħal Kirkop suggests that the village developed as a nodal point within the local rural network, facilitating communication, movement, and interaction between the surrounding settlements. The surrounding landscape, however, was not only defined by its position within this network of routes but also by the presence of extensive deposits of high-quality globigerina limestone, a resource that would later underpin significant quarrying activity in the area.
- 7.27. The cultural features found in the general area of the Scheme are shown in **Figure 7.2** and described in **Table 7.2**.

The Neolithic Period

- 7.28. The area surrounding Ħal Kirkop forms part of a wider archaeological landscape that preserves evidence of human activity dating to prehistory. Less than one kilometre from the village are the megalithic remains located along Dawret il-Gudja Road, in the vicinity of the church of Santa Marija at Bir Miftuħ (**1** in **Figure 7.2**). In this area, only a few metres from the church, the remains of another possible megalithic structure composed of three large megaliths have been recorded near a cistern.
- 7.29. Closer to the Scheme site lies the site of Burmeghez (**2** in **Figure 7.2**). First discovered in 1911, with further discoveries made until 1935, the area yielded the burial of 39 individuals, associated with Temple Period Ceramics. Another prehistoric site, first discovered in 1914, then further investigated in 2019 is Id-Debieba (**3** and **4** in **Figure 7.2**). The development-led archaeological investigation of 2019 determined the presence of a collapsed megalithic structure and postholes cart-ruts, and silo-pits. One of the silo-pits contained the burial of an adolescent, accompanied by animal bones and pottery sherds dating to the Temple Period. Other silo-pits also yielded Temple Period pottery sherds.

The Bronze Age

- 7.30. Evidence from later prehistoric periods is also present within the immediate landscape of the Scheme site. At the edge of the village of Ħal Kirkop stands a Bronze Age menhir dated to around 2000 BC (**5** in **Figure 7.2**). This consists of a large solitary upright megalith not directly associated with any surviving structural remains. The stone is described as a roughly cut soft building stone of a quality similar to that found in the surrounding area. It rests on solid rock at road level, and, for a height of 0.915 m, forms part of the boundary wall of an adjoining field.

- 7.31. At about 300 m to the NE of the Ħal Resqun megaliths is the site of Tal-Mejtin (**6** in **Figure 7.2**). This site consists of a number of pits dating to the Early Bronze Age as shown from the retrieved pottery vessels. These pits were first used in the Bronze Age, and some of them were then reutilised in the Classical Period.

Classical Period

- 7.32. The word ‘Classical’ is an umbrella term for the period that includes Phoenician, Punic, Roman, and Early Christian remains in the context of Maltese archaeology. Cultural features from this period, are sometimes utilised from one phase to the next and therefore it is more cautious to classify them under this term. There is a consensus among scholars of this period who mostly agree that the Islands’ culture essentially remained Punic, until at least the first century BC. Basically, pottery manufacturing techniques, coinage, religious practices, and language remained Punic until this period.
- 7.33. Archaeological finds related to this period can be classified in three main categories: domestic or industrial, e.g., villas; ritual sites, that is temple sites and sanctuaries; and funerary, mostly in the form of rock-cut tombs.

Domestic and Industrial

- 7.34. Most of the Roman estates or villas “replaced or continued earlier agricultural enterprises that pre-existed the Roman presence, namely those of Punic or Carthaginian hegemony over the islands”. In close proximity to the Scheme, the remains of a villa were recorded and excavated in 1898; they were uncovered in a field known as Nadur, formerly called *Fejdes-iz-Żgħir*, situated between the villages of Ħal Luqa and Mqabba, about five miles south of Valletta. The site (**7** in **Figure 7.2**) belonged to an agricultural villa and yielded a well-preserved *trapetum* (olive-pipper), which was taken to the Roman Villa in Rabat in the 1950s by Sir Temi Zammit.
- 7.35. Just about one kilometre from Ħal Kirkop, along Triq iż-Żurriq in Ħal Safi, there are the remains of a wall that probably date to the Roman period. These remains further illustrate the extent of Roman presence in this area, which was likely centred on agricultural activity, particularly farming and olive oil production.

Funerary

- 7.36. The main finds related to the Classical Period in the Maltese Islands are Punico-Roman tombs and Hypogea. The Punic period ranges from the second half of the 8th century BC up to the end of the 1st century AD. Although in 218 BC the Maltese archipelago fell under Roman rule, “the indigenous late Punic culture survived here for at least another two and a half centuries”. They were cut in the rock so as to bury the remains of the local inhabitants, together with pottery and other items. Most of these tombs were looted before their discovery in recent times.
- 7.37. While almost half of the Punic tombs have been found around Rabat and Mdina, denoting the presence of the main settlement(s) there, clusters in other areas would have been associated with other settlements, possibly smaller ones like for example rural hamlets. The closest tomb to the Scheme site was the one found at Tad-Dawl, south of the road leading to Mqabba, near a small chapel dating to the time of Grand

Master Pinto (**8** in **Figure 7.2**). The site overlooks a quarry known as *il-Għalka tal-Miss* within the area called *Ta' Guttaf Gandolf*. The excavated remains consisted of a forecourt leading to two funerary chambers: one rectangular chamber with rounded corners and a longer, irregular chamber connected to a second damaged space. A niche cut into the forecourt—likely intended to hold cinerary urns—was found empty. Although no major artefacts were recovered, pottery fragments of typical Punic type, together with glass and bronze objects, allowed the tomb complex to be dated to approximately the 2nd–3rd century BC.

- 7.38. In August 1928 at Ta' Brillu or Ir-Ramlija (**9** in **Figure 7.2**) a tomb was surveyed. This consisted of a rectangular shaft measuring approximately 1.2 m deep and 1.5 m wide, with four steps cut along the eastern side providing access to a concave burial chamber.
- 7.39. During works carried out at the Malta International Airport in 2022-2023 (**10** in **Figure 7.2**), four shaft and chamber tombs were discovered. These tombs, three of which followed the typical shaft and chamber plan, had been looted and were devoid of artefacts.
- 7.40. A further rock-cut tomb was discovered on 19 April 1943 in a field known as *Tal-Imdiek*, to the west of Hal Kirkop. Located 800 m to the south of the Scheme site, at the corner of today's Triq tal-Frieres with Triq Karlu Darmanin (**11** in **Figure 7.2**), this tomb had already been opened and thoroughly disturbed, with the cavity filled with stones and red earth. Cut into the globigerina limestone, it comprised a shaft oriented along a north-east–south-west axis, measuring approximately 2.7 m in length, 1.2 m in width, and 2.1 m deep, with six steps descending along the south-western side. A rectangular entrance measuring 1.07 m in height and 0.74 m in width led into a burial chamber measuring roughly 2.1 m by 1.5 m, with a height of 1.35 m. The chamber contained a central trench cut into the floor and a small lamp niche in the north-western wall. Only a few fragments of human bone and small sherds from funerary pottery were recovered.
- 7.41. Such discoveries point out to a thriving and socially organised community in the A of I.

'Roman Tower'

- 7.42. A particular feature mainly characteristic of the SE of Malta are the Roman towers, found at Ta' Gawhar, Tat-Torrijiet, Tal-Bakkari, Ta' Wilga and Tas-Santi. Ta' Wilga located to the ENE of the site of the proposed development (**12** in **Figure 7.2**), was excavated in 1910 and inside its chamber Punic pottery was discovered, as well as a rock-cut shaft tomb in its close proximity.

Byzantine Period

- 7.43. The tradition of rock-cut tombs continued well into the Roman Era and the Christianisation of the Maltese Islands. The first catacombs in the Hal Kirkop area date to approximately the 4th–5th centuries AD, a period characterised by the early Byzantine phases in Malta. Several catacombs are known in and around the village, although some have since been lost.

- 7.44. In 1943, a catacomb was discovered in a field at Sqaq tal-Ħarruba, Ғal Kirkop, during military levelling works. This has been located in the vicinity of today's St Benedict College in today's Triq San Gwann (approximately 13 in **Figure 7.2**
- 7.45. Another catacomb was discovered in 1962 during works near the RAF Station Safi preserved in situ in Triq taż-Żebbiegħ (14 in **Figure 7.2**).
- 7.46. Another important catacomb in the vicinity, at Ғal Resqun (15 in **Figure 7.2**), is notable for its engraved reliefs executed in a naïve style.
- 7.47. Together, these catacombs illustrate the presence of small rural Christian communities occupying the landscape around Ғal Kirkop during Late Antiquity.

Medieval Period

- 7.48. For the years following the end of the Byzantine presence in Malta in 870 AD there is sparse documentation. The area around the Scheme site, however, has a relatively large amount of evidence pointing to intense settlements. Although not located within Ғal Kirkop itself, on the western side, about 1 km away, stands the church of Ғal Millieri, built around the mid-15th century. This church was one of four that once served the medieval village of Ғal Millieri, a settlement that has since disappeared and which was situated between Mqabba and Żurrieq.

The Order of St John

- 7.49. A map dated to 1551 has village names such as *Alhaxac* (Ғal Għaxaq), *B'Imestu* (Bir Miftuħ), *Crendi* (Qrendi), *Godia* (Gudja), *Luca* (Ғal Luqa), *Mekabebe* (Mqabba), *Meleri* (Ғal Millieri), *Saphi* (Safi) and *Zuric* (Zurrieq). Ғal Kirkop had too small of a population and was not even a parish at this time to be mentioned.
- 7.50. The map in Perez D'Aleccio's cycle of frescoes of the Great Siege at the Grandmaster's Palace in Valletta, shows further detail, possibly because, with the advent of the Order of St John came certain economic and social stability which led to an increase in population. The frescoes executed in the 1570s and 1580s to depict the Order's victory over the Ottoman's siege of Malta in 1565, shows details of a number of villages in the SE of Malta including C.Corcop (Ғal Kirkop) but also a number of individuals carrying on with their daily activities. These included a hunter and his child chasing hares at *Santa Maria di Loreto* (near Gudja), and a farmer behind an ox tilling the land between *Casal Asciac* (Ғal Għaxaq) and *Casal Gioan* (Ғal-Ġwann, Żejtun), together with a number of figures walking along the road network.
- 7.51. There is no doubt that this part of Malta was agricultural in nature. This is also attested by place names of the localities, which even near the Scheme site refer to irrigation, like tal-Giebjia and Il-Bur. Most of the land near Ғal Resqun belonged to the Curia as is attested by the place name Tal-Isqof to the north of the Scheme site, now mostly covered by the airport and terminal.
- 7.52. The 1575 report of Mgr Pietro Dusina records that there were 50 households in Ғal Kirkop. During his visit he noted the church of the Assumption, the church of St Leonard, the church of the Annunciation, and that of St Nicholas, whose remains

recorded in the SMLP seem to be no longer existing, but which are closest to the Scheme site (16 in **Figure 7.2**).

- 7.53. Ħal Kirkop obtained the status of a parish in 1592, upon the death of the rector of Bir Miftuħ. The parish now included Ħal Kirkop, Ħal Safi, and Mqabba, operating from the church of St James in Ħal Kirkop.

The Shrine dedicated to the Madonna tad-Dawl

- 7.54. The place name of the area originated from the location of a shrine dedicated to the Madonna tad-Dawl. Located on the crossroads of the road network linking Ħal Luqa, Mqabba, Żurrieq and Ħal Kirkop, the shrine was built during the reign of Grandmaster Pinto in 1741. It consisted of a portico with three arches and contained a painting of the Madonna in the middle arch, with statues of St Andrew and St Peter on either side.

The Modern Period

Quarrying Practices

- 7.55. The area known as Ta' Wara id-Djar contains a number of quarries. Ħal Kirkop, like the surrounding villages of Ħal Safi, Qrendi, Żurrieq, Siġġiewi, and Ħad-Dingli, is characterised by a landscape dotted with quarries, attesting to the intensive quarrying activity historically associated with this region. In this southern part of Malta, vertical-sided quarries are a common feature of the landscape.
- 7.56. Ħal Kirkop retains a strong heritage associated with quarrying, which for many years provided the livelihood for numerous villagers. Some of these quarries date back to the period of the Order of St John, while during the twentieth century the *franka* extracted from Ħal Kirkop was highly sought after for building construction. During this period several families from the locality owned and operated quarries, employing workers from the surrounding area.
- 7.57. During the Second World War, stone workers from the quarries of Ħal Kirkop put their specialised skills to practical use by assisting in the excavation of approximately thirty rock-cut shelters around the village. These workers—primarily stonecutters, masons, and quarrymen—dedicated long hours to the construction of these protective spaces, applying their expertise in limestone extraction and cutting. The shelters were intended to provide protection to the local population during aerial bombardments. Of particular importance were those shelters located close to the RAF Luqa Aerodrome, as their proximity to this strategic military installation made them especially valuable and frequently used during air raids.

The Airport

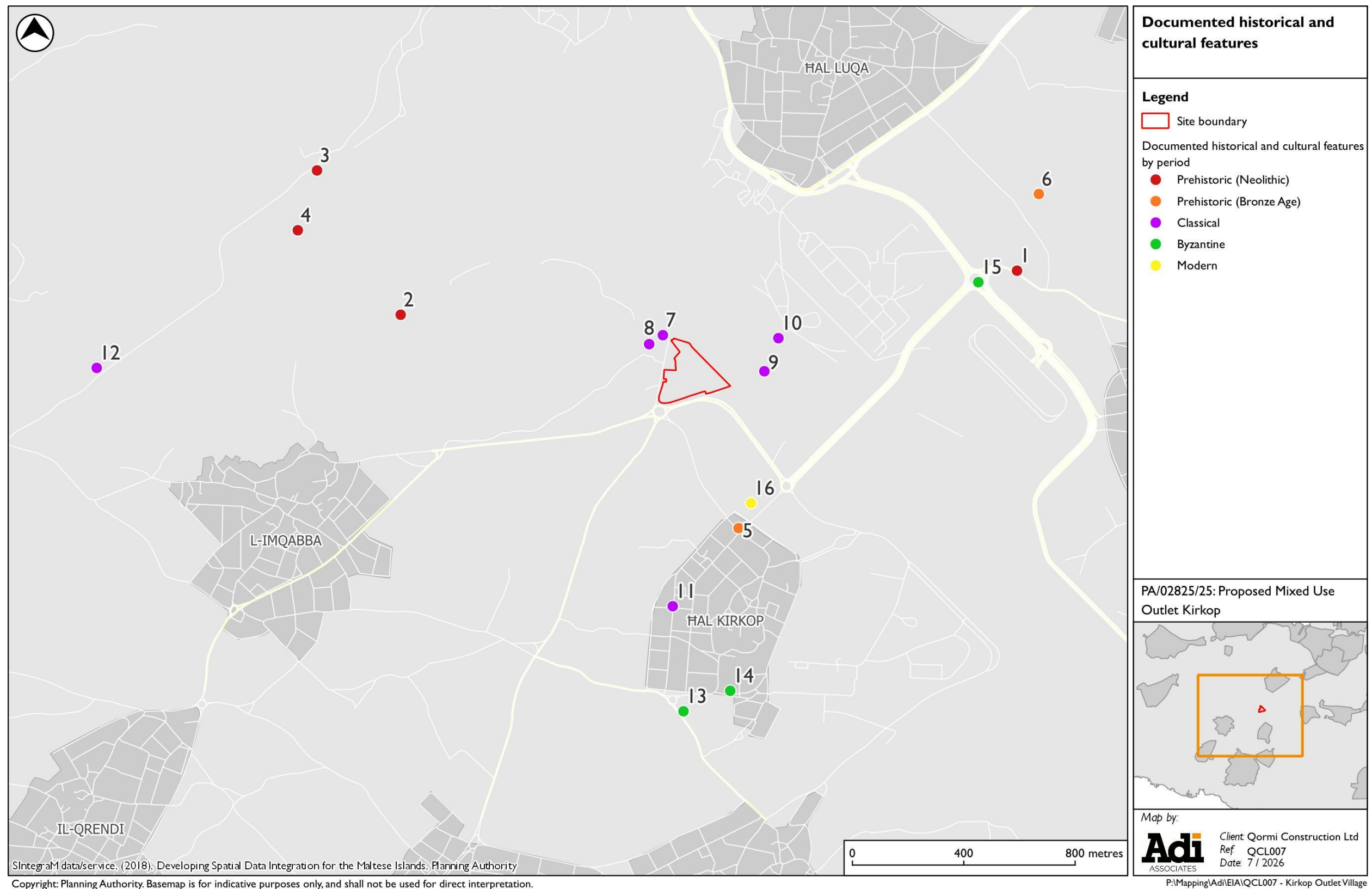
- 7.58. The current landscape of the area has been greatly altered by the Malta International Airport, its two runways and ancillary facilities. It was built to supplement the bases at Kalafrana, Ħal Far and Ta' Qali that were not suitable for use in bad weather. Construction started in 1935, and mostly consisted of levelling the whole area, which was dotted with quarries and purchased from the Church. It was the only tarmacked airfield during WW2 and was also employed for civilian use. Due to its presence, the

surrounding settlement suffered from continuous enemy air bombings, but RAF Luqa was given 'The Invincible Airfield' badge at the end of the war. It remained an RAF station until 1979, from which Squadrons 13 and 203 worked. In the meantime, a civil air terminal was opened in 1947 on the Ħal Luqa side and was replaced in 1992 by the current one at Gudja.

Table 7.2: List of Cultural Features in the general area

Ref. to Fig. 7.2	Description	Site	Period
1.	Megaliths	Ħal Resqun	Prehistoric (Neolithic)
2.	Burials	Burmegheż	Prehistoric (Neolithic)
3.	Megaliths	Id-Debdieba 1914	Prehistoric (Neolithic)
4.	Burial, silos, megaliths, cart ruts	Id-Debdieba 2019	Prehistoric (Neolithic)
5.	Megalith	Ħal Kirkop	Prehistoric (Bronze Age)
6.	Archaeological Deposits	Tal-Mejtin	Prehistoric (Bronze Age)
7.	Agricultural Villa	Tad-Dawl	Classical
8.	Rock-cut tombs	Tad-Dawl	Classical
9.	Rock-cut tomb	Ir-Ramlja	Classical
10.	Rock-cut tombs	Malta International Airport	Classical
11.	Rock-cut tombs	Tal-Imdiek	Classical
12.	Tower	Tal-Wilga	Classical
13.	Rock-cut tombs	Sqaq tal-Ħarruba	Classical (Early Christian)
14.	Rock-cut tombs	Safi RAF Station	Classical (Early Christian)
15.	Rock-cut tombs	Ħal Resqun	Classical (Early Christian)
16.	St Nicholas Chapel and Cemetery	Kirkop	Early Modern

Figure 7.2: Documented Historical & Cultural Features in the general area of the Scheme site



Cultural Heritage Features

- 7.59. There are no scheduled features or properties within the A of I.
- 7.60. **Table 7.3** describes the scheduled and recorded cultural heritage features within the A of I; **Figure 7.3** shows their location and **Figure 7.4** shows images of the features. The features are described in detail in the Catalogue Sheets in **Technical Appendix 4: Terrestrial Cultural Heritage Baseline Study**.
- 7.61. Sixteen features have been recorded during the site survey in the A of I (**Table 7.3**; **Figure 7.3**)

Table 7.3: List of recorded cultural features and their proposed protection

Site Code	Location	Category	Site Description (Address)	Actual Protection	Proposed Protection
IMD2026/001	Ta' Wara d-Djar, Hal Kirkop	Boundary	Rubble Wall	GNI 69/2004 for rubble wall	GNI 69/2004 for rubble wall
IMD2026/002	Ta' Wara d-Djar, Hal Kirkop	Rock-cut	Rock-cut recess	None	Grade 2
IMD2026/003	Ta' Wara d-Djar, Hal Kirkop	Rock-cut and Industrial	Quarry remains	None	Grade 3
IMD2026/004	Triq il-Madonna tad-Dawl, Hal Kirkop	Vernacular	Farmhouse	None	Grade 2
IMD2026/005	Triq il-Madonna tad-Dawl, Hal Kirkop	Boundary	Rubble Wall	GNI 69/2004 for rubble wall	GNI 69/2004 for rubble wall
IMD2026/006	Triq l-Industrija, Hal Kirkop	Vernacular	Rural Complex	None	Grade 2
IMD2026/007	Triq Ir-Ramlja, Hal Kirkop	Industrial	Reservoir and Pumping Station	None	Grade 2
IMD2026/008	Triq il-Madonna tad-Dawl, Hal Kirkop	Boundary	Boundary Marker	None	Grade 2
IMD2026/009	Triq il-Madonna tad-Dawl, Hal Kirkop	Vernacular	Farmhouse	None	Grade 2
IMD2026/010	Triq il-Madonna tad-Dawl, Hal Kirkop	Rock-cut and Industrial	Quarry	None	Grade 3
IMD2026/011	Triq il-Madonna tad-Dawl, Hal Kirkop	Vernacular, Rock-cut and Industrial	Rural Complex built within a quarry	None	Grade 2
IMD2026/012	Triq il-Madonna tad-Dawl, Hal Kirkop	Religious	Location of the Shrine of the Madonna tad-Dawl	None	Class E
IMD2026/013	Luqa Airport, Triq il-Madonna tad-Dawl, Hal Kirkop	Fortifications	Fortification installations	None	Grade 2

Site Code	Location	Category	Site Description (Address)	Actual Protection	Proposed Protection
IMD2026/014	Luqa Airport Gudja l/o Triq il-Madonna tad-Dawl, Hal Kirkop	Industrial	Crash gate to old fuelling station	None	Grade 3
IMD2026/015	Triq Valletta, Hal Kirkop	Vernacular	Farmhouse	None	Grade 3
IMD2026/016	Triq ir-Ramlja, Hal Kirkop	Vernacular	Wellhead	None	Grade 3

Figure 7.3: Cultural heritage features in the Area of Influence



Figure 7.4: Photographs of some of the cultural features

		
Remains of a rock-cut recess (IMD2026/002)	Tool marks on a quarry wall (IMD2026/003)	Reclaimed quarry for agriculture (IMD2026/010)
		
Façade typical of Maltese farmhouses (IMD2026/009)	Rubble wall (IMD2025/005)	Well (IMD2026/016)

Survey of the Scheme site

- 7.62. Given the size of the Scheme site the archaeologists divided the site into 10 zones (see **Figure 7.5**). Although most of the Scheme site is disturbed, given the surrounding features, history of archaeological discoveries in the area, and the presence of a potential remnant of a tomb (IMD2026/002), a description of the Scheme site was also undertaken.
- 7.63. **Zone 1** contains several small rooms, containers, remains of two demolished rooms, stack of scaffolding components, the dismantled cistern of a former concrete batching plant, roofed sheds housing various construction machinery and equipment, and several construction vehicles within this area. A significant accumulation of construction waste is found in the northeastern sector. The remaining ground surface is flat and muddy. Further archaeological exploration is recommended.
- 7.64. **Zone 2** serves as the entrance to the yard and provides access to all other areas. There is a guard room, a boundary wall, and a weighbridge at the southeastern end of the road, which is surfaced with cement.
- 7.65. The northeastern perimeter of **Zone 3** contains roofless garages. At the northwestern tip is a truck-washing facility. A rubble wall extends from the northwestern to the southeastern perimeter. In the southwestern corner, there is a modern room. The ground surface is covered with gravel. Further archaeological investigation is recommended.
- 7.66. An operational concrete batching plant occupies the northeastern portion of **Zone 4**. In the northwestern section a rock-cut recess **IMD2026/002** was found; it is surrounded by bedrock that shows clear evidence of quarrying tool marks. Various buildings constructed from globigerina limestone are located along the eastern and southern perimeters, as well as immediately southeast of the batching plant.
- 7.67. From the southwestern to the southeastern parts of **Zone 5**, several dismantled tower cranes are stored. Along the eastern perimeter, two additional enclosures contain spalls and gravel of different grades. The western sector features a roofed complex used for truck storage. The floor surface is gravel-covered; archaeological investigation is recommended in this zone.
- 7.68. The western perimeter of **Zone 6** contains additional office buildings. The eastern perimeter forms the rear section of the roofed truck complex located in Zone 5, providing access points between the areas. The ground surface is concrete. Further archaeological assessment is advisable.
- 7.69. The two-storey building **IMD2026/007** stands in the southwestern corner of **Zone 7**. The remaining space is occupied by several piles of limestone waste material, including stone blocks, large limestone blocks, wooden beams, scaffolding components, stone slabs, drainage pipes, containers, fibre and plastic cisterns, ropes, and discarded tyres.
- 7.70. The northwestern and southwestern sections of **Zone 8** contain additional construction-related materials, including timber beams, containers, and industrial

machinery. The central zone, stretching along a northeast–southwest axis, houses several discarded Bedford trucks and construction equipment of industrial cultural value. A rubble wall stands at the southwestern tip. Along the southern perimeter are two small globigerina-limestone rooms, a damaged vehicle, a generator, and several boats. The ground surface is gravel. Further archaeological investigation is recommended.

- 7.71. **Zone 9** consists of a service road leading to a gate of the Malta International Airport. The road has several trees along its perimeter and is surfaced with tarmac. This area also merits archaeological investigation.
- 7.72. **Zone 10** comprises *Triq il-Madonna tad-Dawl*, a road situated along the southwestern perimeter of the complex and running parallel to its western boundary. The western side of the road is lined with rubble walls and adjacent agricultural fields, while the eastern side is bordered by the outer boundary wall of the Scheme site.

Rock-cutting

- 7.73. As discussed above this area was, and currently still is, dotted with Globigerina Limestone quarries. The ones recorded in this study are no longer used.

Rock-cut recess

- 7.74. Within the Scheme site **IMD2026/002** was found, which is most likely what remains of a rock-cut burial chamber recorded in the area. It could well possibly belong to the tombs recorded in 1911, or another tomb, which had escaped complete obliteration by quarrying. This suggestion is being put forward due to its resemblance in plan and section to the most common shaft and chamber tombs. Furthermore, the measurements also resemble the tombs excavated in 1943. As such this feature, deserves to be preserved and protected as a Grade 2 feature as one of the last extant rock-cut tombs in the area of Tad-Dawl.

Quarrying

- 7.75. Quarrying on an industrial scale carried out in this part of the Maltese Islands, is also reflected in the A of I. Quarries **IMD2026/003** and **IMD2026/010** are remnants of such practices. In the former, there are tool marks in what remains of the quarry walls, while the latter, has been mostly covered in soil and reclaimed for agricultural purposes. The same can be said of **IMD2026/011** where a rudimentary rural complex had been built to be used in conjunction with the field now reclaiming the quarry. All three features deserve to be recorded and merit a Grade 3 level of protection.

Vernacular Features

- 7.76. The concept of vernacular architecture was first brought up by Rudofsky who gave the generic label of vernacular to the “anonymous, spontaneous, indigenous, rural, as the case may be”. Oliver further expanded on this in the *Encyclopaedia of Vernacular Architecture of the World* where he defined the vernacular as “...dwellings and other buildings of the people. Related to their environmental contexts and available resources, they are customarily owner- or community-built, utilizing traditional

technologies. All forms of vernacular architecture are built to meet specific needs, accommodating the values, economies and ways of living of the cultures that produce them". The A of I falls precisely in this definition: field rooms evolved into larger structures; quarried areas were transformed into tilled fields; and wells were dug, while the community established public paths for access, bounded the tracks with rubble walls and maintained them for posterity.

Farmhouses

- 7.77. Field rooms and farmhouse complexes are very common in Maltese rural areas, which is also the case in the A of I, whose landscape was until recent times an intermingling of quarrying and agriculture.
- 7.78. The farmhouses in the A of I are quite large when compared to typical farmhouses and field rooms. The larger ones might have possibly been owned by the quarry owner or foreman. All four farmhouses (**IMD2026/004**, **IMD2026/006**, **IMD2026/009** and **IMD2026/015**) show a typical layout with minimal apertures, exterior staircases when there is an upper floor, an open terrace, and an animal pen. While they do contain modern accretions, these farmhouses are a rare feature in the area, and as such all merit a Grade 2 level of protection.

Rubble Walls

- 7.79. Rubble walls are an essential part of the Maltese rural landscape. They do not only function as boundary walls between land holdings but also provide a habitat for a number of organisms and are essential soil and water retainers. The two recorded rubble walls in the area (**IMD2026/001** and **IMD2026/005**) are in a bad state of preservation and contain several modern accretions. They are already protected by GN 169/2004 and their current state of repair calls for them to be almost completely rebuilt using the traditional techniques.

Wells

- 7.80. An intensely cultivated agricultural landscape is dependent on water supply: this is suggested both by the place name of Il-Giebjja, as well as the wellhead **IMD2026/016**. Although it is not clear whether its location is original, it is noted that other well heads have been noted in the wider area outside the A of I. Given the good state of preservation, the wellhead merits a Grade 2 Level of Protection.

Industrial Features

- 7.81. The industrialisation of the area in the past century has also led to a number of cultural features related to the airport as well as water-extraction and storage.

Airport-Related Features

- 7.82. The presence of the airport has greatly affected the landscape of the area. This occurred not only by the destruction of a number of rock-cut tombs and levelling of quarries, as discussed above, but also through the creation of other features related to the functioning of the airport in both wartime and peaceful times.
- 7.83. **IMD2026/013** is made up of a number of structures related to air defence. There

seems to be limited information about these features, possibly because they are relatively modern and are within the airport boundary wall. Nonetheless these cultural features deserve preservation, and therefore at least a Grade 2 Level of Protection. Linked to the airport are the remains of the old fuelling facilities accessed through a crash gate in the airport boundary. **IMD2026/014** is a witness to the history of the operation of the airport, and as such deserves to be recorded and merits a Grade 3 Level of Protection.

- 7.84. The modern boundary marker **IMD2026/008** marking Government Property in the area, might have been used to limit public access to the area around the airport. These markers are not very common and follow the pattern of the Colonial period markers. As such this particular marker, deserves to be recorded and merits a Grade 2 Level of Protection.

Reservoir

- 7.85. The Hal Kirkop covered reservoir was built in 1960 in reinforced concrete. It was built over a 20th century quarry which was not existent in 1912. The reservoir has a capacity of 22,000,000 litres and follows the same architectural style of other reservoirs of the time, which were an engineering feat to collect and store rainwater, developing on the preceding traditions of digging boreholes and wells wherever possible. As such this modern cultural feature deserves a Grade 2 Level of Protection.

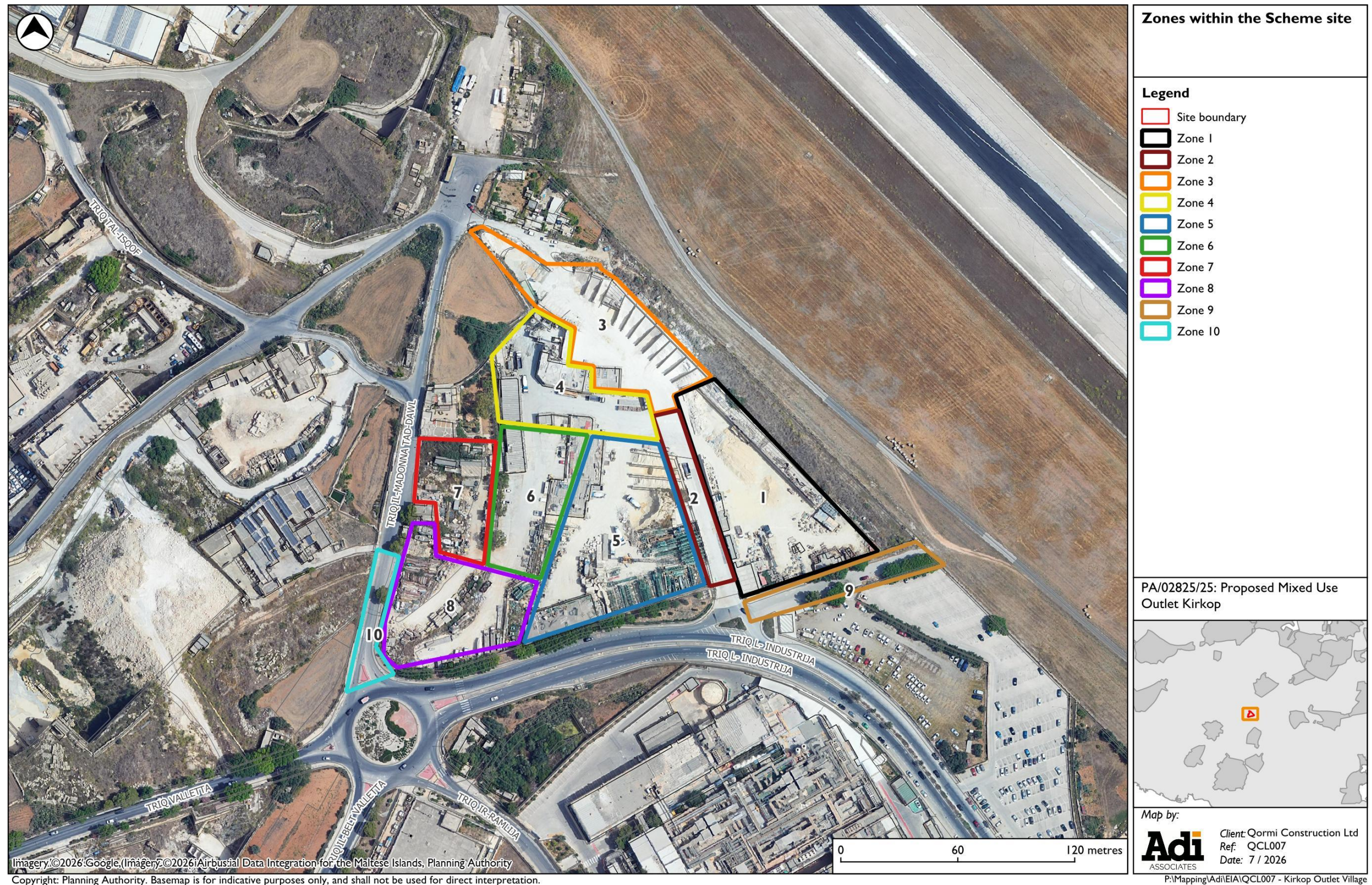
Religious Features

- 7.86. **IMD2026/012** marks the location of the shrine. It is hereby being suggested that this location is scheduled as Class E after an archaeological investigation is carried out to ensure that its foundations or other architectural elements are still *in situ* or in the vicinity. It is said that the stone blocks have been preserved, but their location is unknown. The painting of the Madonna is now located in the Luqa Parish Museum.

THE CULTURAL LANDSCAPE

- 7.87. The area of the Scheme site reflects the gradual transformation from a rural, agricultural setting into a more industrialised environment, transition to large-scale globigerina quarries and the airport and its facilities. Originally, the area was characterized by open fields, prehistoric and Classical settlements whose presence is attested by rock-cut silos and tombs, old pathways, and boundary walls. Gradually agriculture took over with fields separated by rubble walls, farmhouses, used by farmers who, in the 18th and 19th century, venerated the Madonna tad-Dawl in her shrine at the crossroad. Over time, the infrastructural changes brought about first by the soft stone quarries and later by the airport, resulted in a mixed landscape merging an ancient landscape with a modern one. While the ancient cultural landscape has been partially lost, evidence of it is still retained, as attested by the recent excavations at Id-Debdieba, an archaeological site, which was thought to have been completely lost. It is not known whether the villa and tombs of Tad-Dawl, have been completely obliterated or whether some remains are still extant beneath modern development. What is certain is that a number of cultural features in the area are a witness of a continuity of the cultural landscape from the past into the present, witnessing the evolution of the culture and lifestyle of the small rural community of Hal Kirkop.

Figure 7.5: Zones within the Scheme site



ASSESSMENT OF IMPACTS

Determining Impact Significance

- 7.88. The significance of the impacts of the Scheme on cultural heritage is dependent upon the importance assigned to each of the cultural heritage features, either through legislation, or by the Consultants, and the degree of disturbance or damage likely to arise from the construction and / or the operation of the Scheme.
- 7.89. The significance of the impact was judged in terms of whether it is considered to be **not significant**, of **minor significance**, or of **major significance**. The assessment criteria applicable in relation to determining the significance levels are described in **Table 7.4**.

Table 7.4: Impact Significance Criteria

Potential Damage or Destruction to Features	Class or Grade of Cultural Heritage Feature			
	Major Class / Grade A / I	Medium Class / Grade B / 2	Minor Class / Grade C / 3	None / Not graded
No material change to the cultural heritage feature	Not significant	Not significant	Not significant	Not significant
Small scale changes to the cultural heritage feature (i.e., alterations), which are unlikely to affect the integrity of the feature	Major	Minor	Minor	Not significant
Loss of, or disturbance to, the cultural heritage feature which is likely to affect the integrity of the feature	Major	Major	Minor	Not significant

Prediction and Significance of Impacts

- 7.90. As mentioned, there are no scheduled features at the Scheme site or in its close proximity. There are 2 rubble walls (**IMD2026/001** and **IMD 2026/005**) within the Scheme site. **IMD 2026/005** is outside of the Scheme footprint and will not be affected; **IMD 2026/001** is within the Scheme footprint and will be removed. The architects have agreed to dismantle the rubble wall and rebuild it once the works are completed. The only two other features within the Scheme footprint are **IMD 2026/002** (a rock cut feature) and **IMD 2026/003** (quarry remains). The former merits a Grade 2 level of protection whereas the latter has been classified as Grade 3. During a site visit with the architects, the Applicant and the Cultural Heritage Consultants it was noted that because these two features are on the border of the Scheme Site, the excavation will not reach the features, so the features will not be lost. The impact of the Scheme is therefore judged to be not significant since both features will not be lost.
- 7.91. As described above the cultural landscape of the A of I is determined by the various

cultural heritage features found in the area. The Scheme will not result in the demolition of any significant features of cultural value that contribute to the cultural landscape of the area. However, while the Scheme will rehabilitate the site itself, the cultural landscape of the area, which is mostly vernacular in nature, will be affected. The impact is considered of minor significance.

MITIGATION MEASURES

- 7.92. Before any works take place, the Scheme site should be cleared, previously identified modern accretions removed, and the site cleared of any loose soil or rubble to expose the bedrock surface. This will identify if there are any further remains of tombs or agricultural trenches that have been found in nearby Hal Safi and Hal Luqa in recent years. Any clearing works and subsequent clearance of bedrock would be monitored by archaeologists under supervision of the Superintendent of Cultural Heritage. It has been agreed with the Applicant that features **IMD2026/002** and **IMD2026/003** will be preserved on site and will not be excavated. Monitoring of the works will ensure that the features are maintained.
- 7.93. The Scheme site also houses a farmhouse **IMD2026/004**, which, although including modern elements, it follows the typical plan of a Maltese farmhouse. The farmhouse is not within the built footprint and will therefore be preserved. Feature **IMD2026/001** is the remains of a rubble wall. As mentioned, the architects have agreed to dismantle the rubble wall and rebuild it once the works are completed.
- 7.94. In view of the potential for impacts on cultural heritage arising from possible loss of, or damage to, unrecorded archaeological artefacts on the site, it is recommended that the excavation works be supervised by qualified archaeologists, who would report to the SCH in the eventuality that uncharted artefacts are encountered. Any cultural heritage features unearthed should be appropriately recorded and, wherever possible, significant features should be salvaged or the Scheme designs amended, as may be directed by the SCH. Again, this should be carried out in accordance with the directions issued by SCH.
- 7.95. Given the vernacular nature of the cultural landscape of the area, it is recommended that soft landscaping including indigenous shrubs and rural features such as rubble walls could be used to soften the transition between the development and the surrounding rural environment.

RESIDUAL IMPACTS

- 7.96. The impacts in respect of the rock cut feature and quarry marks are mitigated because the architects confirmed that the excavation excludes these features. The residual impacts are therefore considered to be not significant.
- 7.97. The residual impacts in respect of any unrecorded cultural heritage features that may be present within the Scheme site are uncertain, as this depends on whether features are present, the importance of these features, and the extent of any loss or damage to the features.

7.98. **Table 7.5** summarises the impact assessment.

MONITORING REQUIREMENTS

7.99. It is recommended that prior to any works taking place in connection with the Scheme, the SCH is consulted in respect of the recording of the heritage features present on land, and that the relevant conditions for recording and removal of the features and for monitoring of the works, or further archaeological investigations, are included in any eventual planning permit.

Table 7.5: Summary of Impacts on Cultural Heritage

Predicted Impact	Beneficial/ Adverse/ Neutral	Nature, Scale and Type of Impact						Probability of Impact Occurring (Likely, Unlikely, Remote, Uncertain)	Significance of Impact (Major/Minor/ Not Significant)	Proposed Mitigation Measures	Significance of Residual Impact (Major/Minor /Not Significant)
		Constr'n / Oper'n	Extent of impact (Nat / Local / Site)	Direct/ Indirect	S-term / L-term	Perm / Temp	Revers / Irrevers				
Loss or damage to recorded cultural heritage features	Adverse	Constr'n	Local / site	Direct	L-term	Perm	Irrevers	Likely	Minor	Consultation with SCH on recording / salvaging / removal of heritage features on site Monitoring of clearance and excavation works	Not significant
Loss or damage to unrecorded archaeological or cultural heritage features within the site	Adverse	Constr'n	Site	Direct	L-term	Perm	Irrevers	Uncertain	Uncertain, depending on whether features are present, their level of importance, and the extent of any loss or damage	Archaeological monitoring during excavation / recording of features / salvaging of significant features or redesign of Scheme to retain features in situ if these are found	Uncertain, depending on whether features are present, their importance and the extent of any loss or damage

8. LANDSCAPE AND VISUAL AMENITY

INTRODUCTION

- 8.1. This chapter addresses the potential impacts of the Scheme on landscape and visual amenity. It describes the existing landscape and visual amenity of the Scheme site and its surroundings and assesses how this might change as a result of the Scheme.
- 8.2. Assessment of landscape and visual amenity involves examination of the wide range of factors that contribute to the qualities and attributes of the existing landscape and that may contribute to the landscape of the Scheme site. This involves consideration of the evolution of the landscape and the factors that have led to its current condition, from the underlying geology through to anthropogenic activities.
- 8.3. Landscape and visual impacts are distinct, albeit strongly related. Landscape impacts result from the interaction between a development and the existing landscape resources, experienced through changes to any element or combination of landscape elements. Visual impacts relate to the effect that a development has on the amenity of sensitive receptors (those experiencing views of the development site), relating to the actual or perceived visible changes to the character and quality of the landscape.
- 8.4. The key issues for the landscape and visual amenity assessment are:

Key Issues:

- **Effects on the landscape setting of the Scheme**
- **Changes in the views of the sensitive receptors**

OBJECTIVES OF THE ASSESSMENT

- 8.5. The objectives of the landscape and visual amenity study were to:
- Undertake a baseline survey and characterisation of the landscape and visual amenity at and around the Scheme site, using desktop and field survey techniques;
 - Evaluate the landscape character of the Scheme site and its setting;
 - Establish the Zone of Theoretical Visibility (ZTV) for the Scheme and identify the key viewpoints and sensitive receptors;
 - Input the potentially beneficial design measures to the Scheme;
 - Predict the impacts of the Scheme on the visual amenity in the ZTV;
 - Assess the significance of the impacts on the landscape and visual amenity of the ZTV; and

- Describe the mitigation measures designed into the Scheme to minimise adverse impacts and enhance any beneficial impacts on the landscape and visual amenity.

LEGISLATION AND POLICY GUIDANCE

- 8.6. The Constitution of Malta (Section 9) declares that the State shall safeguard the landscape and the historical and artistic patrimony of the Nation. These are the only aspects of the environment referred to in the Constitution, underlining the importance of the landscape and historical heritage.

Landscape Assessment Study of the Maltese Islands 2004

- 8.7. The Malta and Environment and Planning Authority's (MEPA) Landscape Assessment Study of the Maltese Islands was undertaken as part of the review of the former Structure Plan for the Maltese Islands. The primary purpose of the Study appears to have been to identify Areas of High Landscape Sensitivity to inform the Structure Plan Review. The Study does not provide an assessment methodology to consider the effects of a specific development; it does, however, provide a useful baseline assessment of the prevailing landscape character of the Maltese Islands.
- 8.8. The Landscape Assessment Study locates the Scheme site on the edge of the 'Mqabba Quarry Area' Landscape Character Area (LCA) - M40, where it interfaces of the 'Malta International Airport' LCA (M39) and the 'South Airport Hinterland' LCA (M38). The area in which the Scheme site is located is described as being *"dominated by numerous franka stone quarries and interspersed with pockets of agricultural land"*. The area is described as having very few enhancing features, but where *"the fact that the area is relatively flat, and is not overlooked by nearby high ground, this serves to mitigate heavily against the negative visual impact of the quarrying activity"*. There is reference to the 'tasteful' restoration of older quarries into orange groves, fruit orchards and agricultural land. Nevertheless, the quarrying activity, is described as *"representing a veritable eyesore, which is compounded by the shabby nearby constructions"*. These include the ST Microelectronics complex, located immediately to the south of the Scheme site, which is described as *"a massive intrusion to the area and aesthetically cannot be considered to make a positive visual contribution to the area"*.
- 8.9. In the wider context, the Malta International Airport (MIA) airfield itself is described as *"presenting an enhancing feature in terms of permitting access to long distance views"* and where *"the areas adjacent to the runways are green in winter, thus contributing to the overall wetter month greenery"*. The detracting features are identified as the radar dome, which *"contrasts sharply with the settlements of nearby Kirkop and Mqabba"* and the *"various other navigation and illumination support structures"*. Light pollution from the MIA complex is also identified as being a detracting feature.

STANDARDS AND GUIDELINES

- 8.10. The landscape and visual assessment was carried out with reference to:
- The MEPA's 2015 Best Practice Guide Visual Simulations; and
 - The UK's *Guidelines for Landscape and Visual Impact Assessment (GLVIA) 2013*

(Institute of Environmental Management & Assessment (IEMA) and the Landscape Institute).

ASSESSMENT METHODOLOGY

Desk Study Methodology

Landscape Assessment

- 8.11. The landscape baseline conditions were determined through a desk study and field surveys. The desk study included:
- A review of the information shown on the base map of the area and reference to the maps prepared for the geo-environment, cultural heritage, and land use aspects of the EIA;
 - An analysis of aerial photographs to determine land use trends; and
 - A review of existing baseline information from:
 - Literature searches;
 - Previous environmental and planning studies undertaken in the area;
 - Historic maps; and
 - Legislation and policy documents.

Landscape Character, Value and Sensitivity

- 8.12. MEPA's Landscape Assessment Study of the Maltese Islands characterises the landscape at a national level, into a series of units known as landscape character areas (LCAs). The Study describes landscape characteristics and qualities, and the influences on the landscape. The landscape character assessment of the Scheme site and its surroundings considers MEPA's Landscape Assessment Study, as well as the results of the desk and field studies when characterising the landscape in the area.
- 8.13. The value of the landscape receptor is also considered. The value of a landscape character receptor is a reflection of its importance in terms of any designations that may apply, or its importance in itself as a landscape or townscape resource, which may be due to its ecological, cultural, or recreational value. The higher the value of the receptor, the greater is its sensitivity to the development. The value is assessed as being high, medium, or low.
- 8.14. Landscape sensitivity is a complex issue. The GLVIA refer to consideration of a landscape's susceptibility to change, meaning "*...the ability of the landscape receptor...to accommodate the proposed development without undue consequences for the maintenance of the baseline situation and/or the achievement of landscape planning policies and strategies*". Landscape character sensitivity was then defined in accordance with the criteria set out in **Table 8.1**.

Table 8.1: Landscape Character Sensitivity

Landscape Character Sensitivity		
High	Medium	Low
A Landscape Character Area / Local Landscape Tract in which defining characteristics are susceptible to change	A Landscape Character Area / Local Landscape Tract in which some defining characteristics may be susceptible to change	A Landscape Character Area / Local Landscape Tract in which defining characteristics are less susceptible to change

Magnitude of Change to Landscape Resource

- 8.15. The GLVIA advocates that the identification of the magnitude of change depends on (i) the size or scale of change in the landscape that is likely to be experienced as a result of each effect; (ii) geographical extent over which the landscape effects will be felt; and (iii) the duration and reversibility of the landscape effects. The magnitude of change in a landscape depends on the loss, change, or addition of any feature, or any change in the backdrop to, or outlook from, a landscape that affects its character. **Table 8.2** presents criteria for magnitude of change to a landscape resource.

Table 8.2: Magnitude of Change to Landscape Resource

High	Medium	Low	Imperceptible change
An obvious change in landscape characteristics and character	Discernible changes to landscape characteristics and character	Small changes to landscape characteristics and character	A largely imperceptible change to landscape characteristics and character

Visual Amenity Assessment

- 8.16. The Zone of Theoretical Visibility (ZTV) for the Scheme was defined using a combination of desk and field-based techniques. The extent of the viewshed (ZTV) was verified in the field, along with the eight representative viewpoints that were agreed with the Environment and Resources Authority (ERA) for the visual amenity assessment (see **Figure 8.1**). The existing views from these viewpoints were then photographed, photomontages created, and the visual amenity and changes thereto, as a result of the Scheme, appraised.

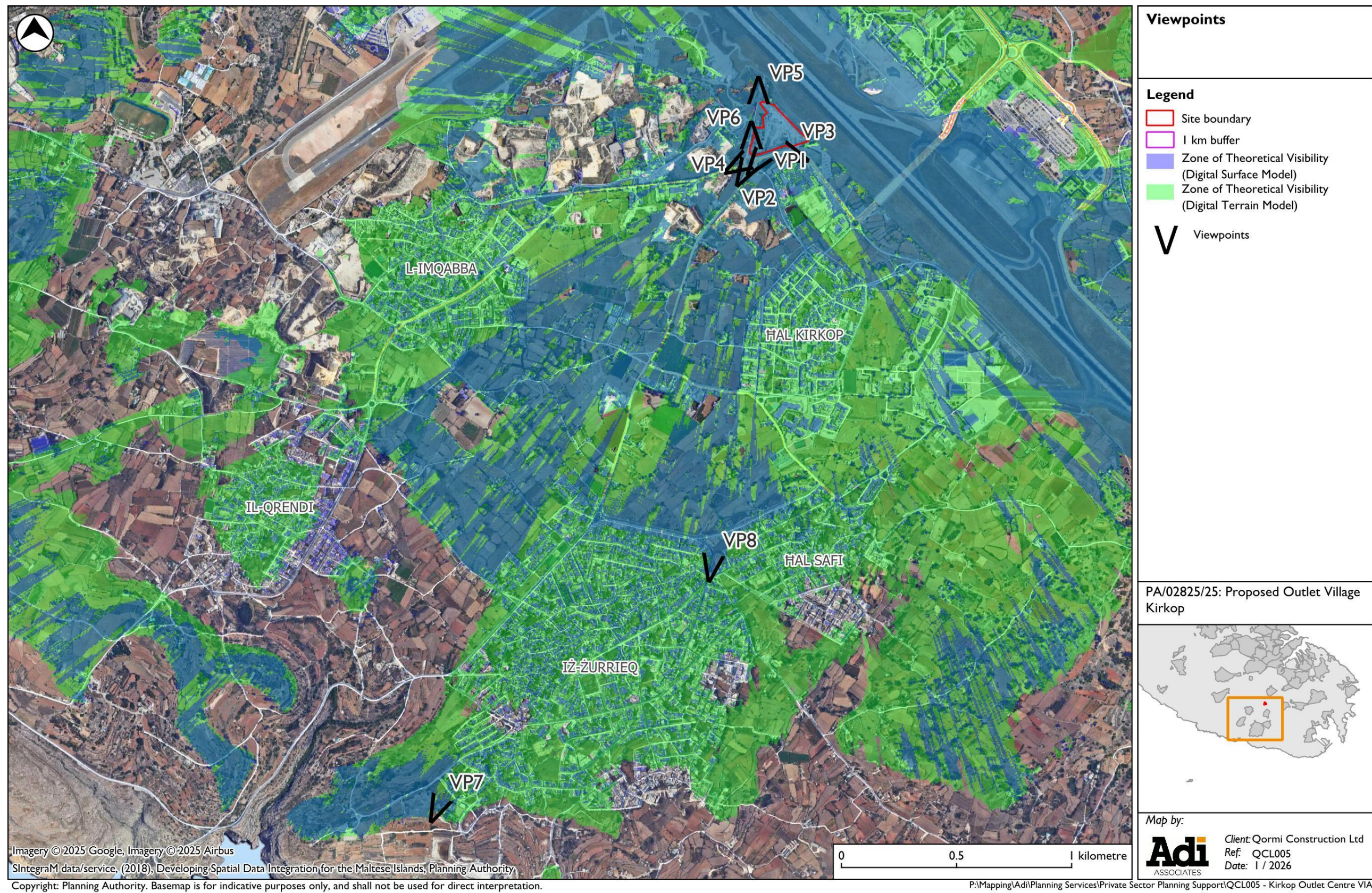
Sensitivity of Visual Receptors

- 8.17. The sensitivity of the visual receptors is dependent on their susceptibility to the change in the view and visual amenity, and also the value they attach to the view.

Susceptibility of the Visual Receptor

- 8.18. The susceptibility of the visual receptor, and their experience of changes in views and visual amenity, is primarily related to their occupation or activity at the viewpoint and the extent to which their attention or interest is focussed on the view when at the viewpoint.

Figure 8.1: Zone of Theoretical Visibility and viewpoints



- 8.19. The UK Guidelines note that the most sensitive visual receptors are likely to include:
- People (residents or visitors) engaged in outdoor recreation, whose attention or interest may be focused on the view;
 - Communities - where the development results in changes to the landscape setting or valued views enjoyed by the community; and
 - Visitors to heritage sites, or to other attractions, where views of the surroundings are an important contributor to the experience.
- 8.20. The Guidelines identify other visual receptors less susceptible to changes in the view and visual amenity, including people engaged in outdoor sport or recreation other than those involving an appreciation of the landscape, people travelling through the area other than those involving an appreciation of a scenic landscape, and people at their place of work.
- 8.21. The visual amenity assessment does not consider the views of residents from residential properties. The process does not assess the impacts of a development on the rights or values of individuals, but rather on the public collectively. Views from private property are not protected under planning law, or other public policy, except in so far as the zoning of the land implies certainty as to the type of development that may be permitted. The rights of nearby residents are, however, somewhat protected through the planning system, since they can object to any change of land use (or airspace). In assessing the impacts on the public collectively, the visual amenity assessment does however consider the impact on views from residents of the area in which the development is located as they move about the public realm.
- Value Attached to the View*
- 8.22. The value a visual receptor attaches to a view is related to their recognition of the value (for example, in relation to designated heritage assets and / or scenic landscapes) and indicators of the value of the view to visitors, including the provision at the viewpoint of a viewing area, seating, signage / information boards, etc.
- 8.23. Based on the Guidelines, the following definitions are used to categorise the sensitivity of the visual receptors:
- **High sensitivity receptors:** those who visit a viewpoint to appreciate the view (locals and tourists), and who are therefore focussed on the view and the visual amenity;
 - **Moderate sensitivity receptors:** those who visit a viewpoint (locals and tourists) other than those visiting to specifically appreciate the view. These receptors are not specifically focussed on the view, but the visual amenity has an effect on their experience at the viewpoint (for example, recreational walkers, joggers / runners, cyclists, etc.); and

- **Low sensitivity receptors:** those who are passing through / by a viewpoint and who are not focussed on the view or the visual amenity (for example, drivers and their passengers, pedestrians, those working in the area, etc.).

Magnitude of Visual Effect

- 8.24. Identification of the magnitude of the visual effect depends on the size or scale of the change in the view, the geographical extent of the area influenced by the change, and the duration and reversibility of the change.
- 8.25. The size or scale of the change in the view is judged in respect of:
- the loss or addition of features in the view and changes in its composition, including the proportion of the view occupied by the proposed development;
 - the degree of contrast or integration of any new features or changes in the landscape with the existing or remaining landscape elements and characteristics, in terms of form, scale and mass, height, colour and texture, etc.; and
 - the nature of the view of the proposed development, in terms of the relative amount of time over which it will be experienced and whether the view will be full, partial or glimpse.

Geographical Extent

- 8.26. The geographical extent of the view is judged in respect of:
- the angle of the view in relation to the main activity of the visual receptor at the viewpoint;
 - the distance of the viewpoint from the proposed development; and
 - the extent of the area over which the change would be visible.

Field Survey Methodology: Landscape

- 8.27. A comprehensive field survey was undertaken, in accordance with the *Guidelines for Landscape and Visual Impact Assessment* (IEMA and the Landscape Institute 2013). The field survey served to record objective and subjective impressions of the landscape, and details of landscape condition, land use, and management. It contributed to the delineation of local landscape tracts and the identification of potentially sensitive landscape receptors in accordance with the Guidelines.
- 8.28. **Table 8.3** describes the identified landscape receptors. **Figure 8.2** illustrates the identified Landscape Character Area (LCA) and Local Landscape Tracts (LLT); as mentioned, the Landscape Assessment Study locates the Scheme site on the edge of the Mqabba Quarry Area LCA, and on the interface of the Malta International Airport LCA and the South Airport Hinterland LCA. **Figure 8.3** shows images of the landscape elements and characteristics of these LCAs.

Table 8.3 Landscape Receptors

Landscape Elements	<i>Quarrying and industrial area:</i> relatively flat area dominated by franka stone quarries, restored quarries and pockets of agricultural land, extending from the settlement of Mqabba in the west to the Scheme site and the MIA complex in the east. There are a number of quarrying-related and other industrial developments in the area, including the Elbros Construction Yard on the Scheme site and the ST Microelectronics complex, which is visually noticeable and a detracting feature in the landscape, and which is currently being expanded. <i>Malta International Airport (MIA) complex:</i> expansive area essentially enclosing the Scheme site to the north and east. The area includes the cross-crossing airfields and girdle roads, flat terrain allowing for expansive views, as well as the MIA Terminal and SkyParks buildings and associated car parks, the old Malta Airport and former military buildings, and the tall aircraft hangers / sheds on the northern airfield fringe, which are detracting features in the landscape. <i>Settlements:</i> the whole of the settlement of Kirkop, to the south of the Scheme site, as well as Mqabba to the west. The MIA complex separates the Scheme site from the settlements of Luqa and Gudja. The relatively flat terrain affords views of the Parish Churches of Kirkop and Mqabba, although the emerging taller townscape on the settlement edges is reducing their visibility and changing the traditional skylines of these settlements. The settlement edges also vary in achieving successful visual integration on the urban-rural interface, with poor examples in respect of development form (unsympathetic height, massing, and design), and landscaping context (lack of regard to existing landscape / vegetation and inattention to new landscaping integration). <i>Rural area:</i> extensive tract of dry farmland separating Kirkop and Mqabba in the south, bisected by Triq il-Belt Valletta, and smaller pockets interspersed between the quarries to the north, with some older queries having been restored for agricultural land. There are a number of rural vernacular buildings, largely associated with arable farming (including abandoned farmhouses and field rooms), as well as greenhouses, rubble walls, and a network of country tracks / paths. There are also buildings associated with industry and quarrying, often being detracting features in the landscape.
Landscape Characteristics	The landscape is dominated by its more urban elements – the MIA complex, the ST Microelectronics complex, the settlements of Kirkop and Mqabba, and the quarrying and related smaller industries that dot the landscape. Between Kirkop and Mqabba in the south the rural environment is generally pleasant. Further north, the rural pockets are visually disjointed.
Landscape Character	The distinct and recognisable pattern of elements that occurs consistently in the landscape, and how this is perceived. Landscape character areas have been defined and are illustrated in Figure 8.2.

Figure 8.2: Landscape Character Areas and Local Landscape Tracts

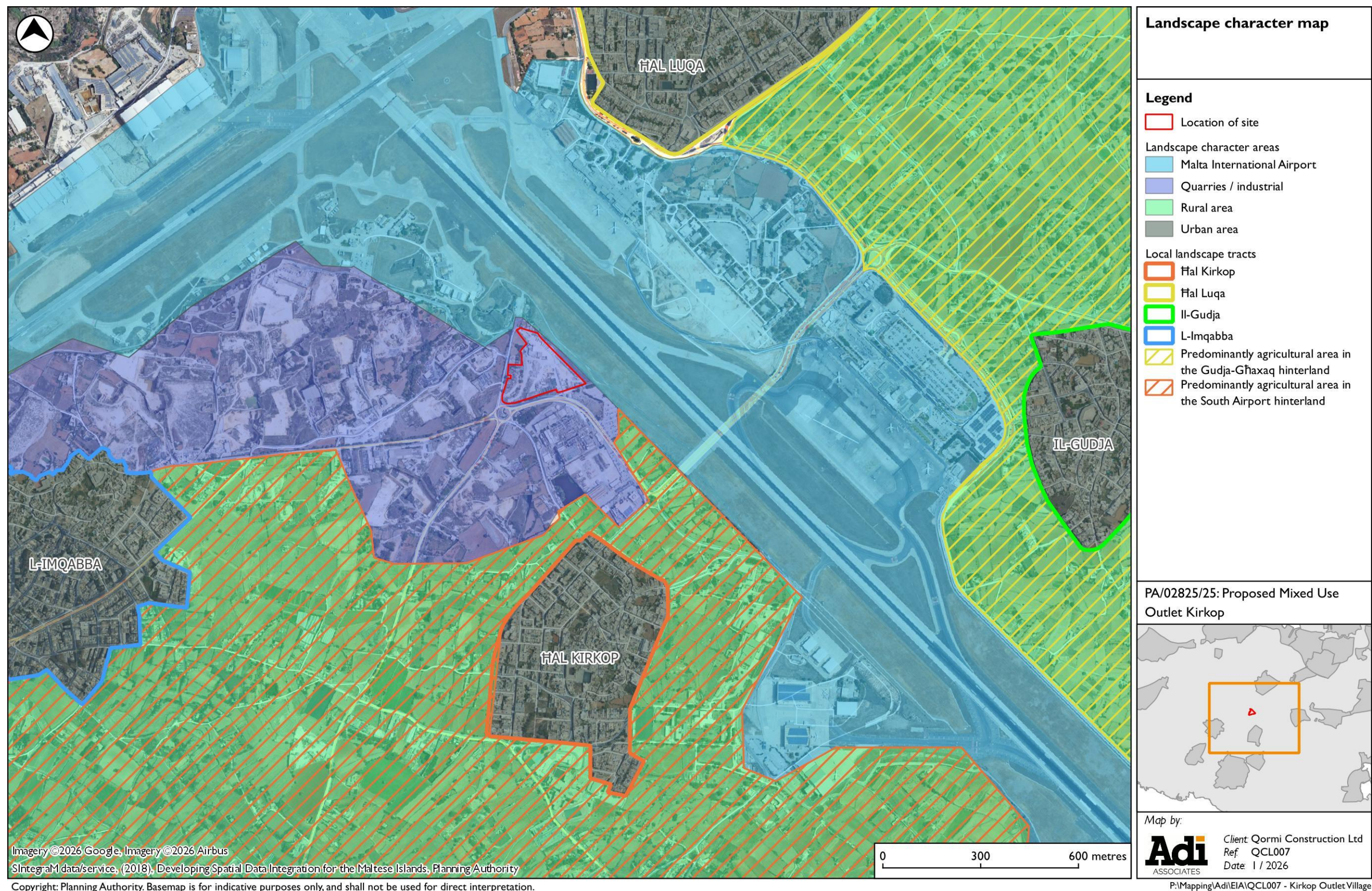


Figure 8.3: Landscape Elements and Characteristics of the Area



Malta International Airport complex



ST Microelectronics complex

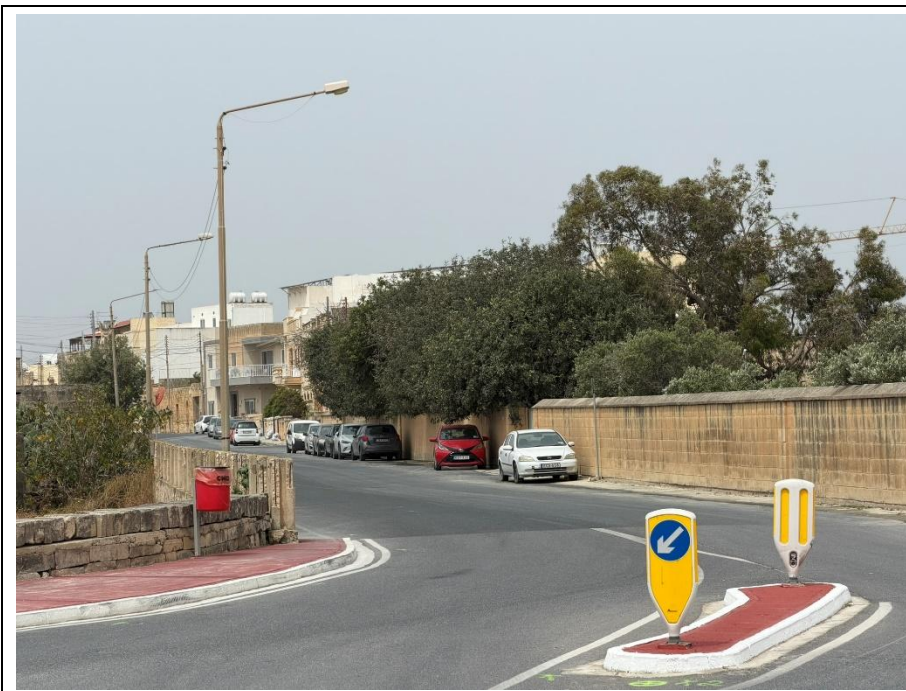
Quarrying development



Farmhouse adjacent to the Scheme site on Triq il-Madonna tad-Dawl



Agricultural land



Edge of the Mqabba Development Zone



Edge of the Kirkop Development Zone

Field Survey Methodology: Visual Amenity

- 8.29. The extent of the visibility of the Scheme site was verified during the field survey and the ZTV and publicly accessible viewpoints confirmed. The field survey also confirmed the areas from where the site is not visible.
- 8.30. The potential visual receptors identified through the field survey, and in order of descending sensitivity, are:
- Recreational walkers, joggers / runners, cyclists (locals and visitors);
 - Drivers and their passengers; and,
 - Workers in the area.

DETERMINING IMPACT SIGNIFICANCE

- 8.31. The significance of impacts on the landscape and visual amenity is dependent upon judgements about the value of the existing visual amenity compared to the new visual amenity that would be created, the number of people affected, the receptors' susceptibility to change, the magnitude, duration and permanency of the changes, and subjective judgements about the degree to which these changes would matter to those concerned.

Landscape Assessment

- 8.32. The significance of the landscape impacts has been defined based on the sensitivity and magnitude criteria as described in **Table 8.3** above, as follows:
- **Major significance:** *Large negative changes in the landscape that are out of character with the landscape* - where the extent of the negative impact on the landscape setting is large in scale or magnitude and the landscape sensitive receptor is of high sensitivity to change and / or a high intrinsic value and, as a consequence, the integrity of the setting would be significantly altered. The impact would be of international or national importance. The impact would be of a long-term nature (or very severe short-term in the case of construction impacts), irreversible, and certain or likely to occur;
 - **Moderate significance:** *discernible changes in the landscape that are out of character with the landscape* - where the extent of the negative impact on the landscape character is medium in scale and the landscape sensitive receptor is of medium sensitivity to change and / or of medium intrinsic value. The impact would be of a long-term nature, irreversible, and likely to occur;
 - **Minor significance:** *small changes in the landscape that are out of character with the landscape* - where the extent of the negative impact on the landscape setting is small in scale or magnitude and the landscape sensitive receptor is of a low sensitivity to change or a low intrinsic value. The impact would be of local importance. The impact would be of a long or short-term nature, and likely to occur; and

- **Not significant:** *no perceptible changes to the landscape setting* - where the extent of the negative impact on the landscape setting is of limited importance in scale or magnitude and the landscape sensitive receptor is of a low sensitivity to change and / or a low intrinsic value. The impact would be of local importance. The impact would be of a long to short-term nature, and / or unlikely to occur.

Visual Amenity

8.33. The significance of visual impacts has been assessed in relation to:

- The number and susceptibility of the receptors affected;
- The duration of the changes;
- The extent of visibility and distance from the Scheme;
- The type of view – proportion of the development visible, focus on the Scheme due to proximity, and whether it is fixed, transient, or sequential;
- The changes to the view from the identified viewpoints, as illustrated by the photomontages; and
- The scope for mitigation / enhancement measures to screen the development.

8.34. Based on the above criteria, an assessment of the significance of the visual impact on each of the viewpoints was made in terms of whether it is considered to be of:

- **Major significance** - *large changes in the view* - where the extent of the impact on the view and visual amenity would be large in magnitude and affect a high number of visual receptors, or where the view is of particular value to the receptors; or
- **Moderate significance** – *moderate change to the view* - where the extent of the impact on the view would be moderate in magnitude and affect a moderate number of receptors, or is of some value to receptors; or
- **Minor significance** – *smaller changes to the view* - where the extent of the impact on the view and visual amenity would be small in magnitude and affect relatively few visual receptors, or a larger number of receptors with passing interest in the view and visual amenity; or
- **Not significant** - *little or no obvious changes to the view* - where there would be little or no obvious change to the view and visual amenity (imperceptible), and where the extent of the impact would be of limited importance in magnitude, or affect few visual receptors, or receptors of low sensitivity to change, and / or be a view of low value to the receptors.

8.35. **Table 8.4** summarises the impact significance in a tabular format, noting that there is a gradual transition between categories and that magnitude and sensitivity are not necessarily evenly weighted, such that the final decision on significance comes down

to professional judgement.

Table 8.4: Identification of Impact Significance

Magnitude of Visual Effect					
		Imperceptible	Small	Moderate	Large
Susceptibility of Visual Receptor	Low	Not significant	Not significant or Minor (<i>depending on value of the view</i>)	Minor	Minor or Moderate (<i>depending on value of the view</i>)
	Medium	Not significant	Minor	Moderate	Moderate or Major (<i>depending on the value of the view</i>)
	High	Not significant	Minor or Moderate (<i>depending on the value of the view</i>)	Moderate or Major (<i>depending on the value of the view</i>)	Major

EXISTING CONDITIONS

Landscape

- 8.36. The Scheme site is located adjacent to the Malta International Airport complex, to the north and east, opposite the ST Microelectronics complex, to the south, and approximately 460 m and 1 km (plan distance), respectively, from the Kirkop and Mqabba Development Zones, to the south and west. The setting of the site to the north, south and east is essentially urban in character, albeit with the expansive openness of the airfields to the north and east. The extensive ST Microelectronics site comprises a dense complex of buildings rising to a height of approximately 25 m, and there is further development under construction in the southern part of this complex.
- 8.37. The Scheme site overlooks the five-arm roundabout at the junction of Triq L-Industrija, Triq ir-Ramlja, Triq il-Belt Valletta, Triq Valletta and Triq il-Madonna tad-Dawl. Triq Valletta (via Triq L-Industrija) is the primary route to Mqabba from the Arterial / Distributor network. The heavily-trafficked Triq Valletta is flanked by quarry sites, but is also tree-lined, and this affords the route an attractive visual appearance. Triq L-Industrija is flanked by the ST Microelectronics complex and the MIA, giving it a more industrial appearance. Along the local access Triq il-Madonna tad-Dawl, there is a more rural appearance to the views, even where it borders the Scheme site, as the Elbros Construction yard is somewhat screened behind the existing high boundary wall.

Landscape Characterisation

- 8.38. The landscape types and character areas that provide the landscape context to the Scheme site are described below. The distinction between the types and areas is defined in the assessment as:

- *Landscape Character Types* - describe distinct and homogeneous generic landscape units that share common combinations of elements (listed and described in **Table 8.5**); and
- *Landscape Character Areas* - single unique areas that represent the discrete geographical areas of a particular type. Each Landscape Character Area may be divided into Local Landscape Tracts (LLT) that describe potential problems and pressures affecting the landscape character (illustrated in **Figure 8.2** and described in **Table 8.5**).

Table 8.5: Landscape Character Types and Landscape Character Areas

Defined Area / Attribute	Summary Description
Kirkop – Mqabba Hinterland Landscape Character Area	This LCA is a mix of urban and rural landscape. It comprises the settlements of Kirkop and Mqabba, together with their rural hinterlands, as well as the Malta International Airport (MIA) complex and the ST Microelectronics complex. For the purposes of the assessment, the following Local Landscape Tracts (LLTs) are described as: ○ Quarrying and Industrial Area ○ Malta International Airport ○ Settlements – Kirkop and Mqabba ○ Rural area
LLT: Quarrying and Industrial Area	Mix of urban and rural character, where the existing quarries are not significantly visually intrusive, but certain of the industrial elements are noticeably detracting features in the landscape, affording the area an urban-industrial character. <i>Problems</i> ○ Presence of the extensive ST Microelectronics complex – urban encroachment and visual intrusion ○ Heavily-trafficked Triq L-Industrija and Triq Valletta ○ Abandonment of agricultural land and rural structures / features <i>Landscape Sensitivity</i> ○ Low (low value, low condition)
LLT: Malta International Airport	Area with a strong use-related character, with an extensive open landscape across the airfields and a mix of older and more modern, taller buildings and large sheds / hangers on the perimeter. <i>Problems</i> ○ Urban encroachment into rural hinterland ○ Visual intrusion from industrial-style sheds / hangers <i>Landscape Sensitivity</i> ○ Low (low value, moderate condition)

LLT: Settlements – Kirkop and Mqabba	Settlements with a mix of traditional and modern, generally low-lying townscape, having a rural setting with relatively good urban / rural interface <i>Problems</i> ○ Traditional townscape character and roofscape of the settlements is changing, with the appearance of more modern, higher development form on the edges in particular ○ Threats to the pleasantness of the urban / rural interface and transition to the rural area, including through the loss on vegetation on the urban edge <i>Landscape Sensitivity</i> ○ Moderate (moderate value, moderate condition)
LLT: Rural Area	Primarily dry farmland separating Kirkop and Mqabba in the south, and smaller pockets interspersed between the quarries to the north, including reclaimed quarries. Interspersed with vernacular buildings, greenhouses, rubble walls, and a network of country tracks / paths. <i>Problems</i> ○ Presence of buildings associated with industry and quarrying ○ Heavily-trafficked Triq Valletta and Triq il-Belt Valletta ○ Urban encroachment, from the settlements and the industrial area ○ Abandonment of agricultural land and rural structures / features ○ Loss of vegetation and greenery <i>Landscape Sensitivity</i> ○ High (high value, moderate condition).

Visual Amenity: Zone of Theoretical Visibility

8.39. **Figure 8.1** above illustrates the computer generated ZTV. The field survey was carried out to select the best viewpoints and to identify the long, medium, and short distance views from public places. The selected viewpoints (8) were agreed with the ERA and are also shown in **Figure 8.1**.

Scheme Site Visibility

8.40. In assessing views, there is often likely to be a continuum in the degree of visibility of the development from full view to no view. **Table 8.6** summarises the situation in respect of the Scheme and with regard to the following:

- Extent of site visibility – full view, partial view, glimpse, or no view into the site at all demonstrates the exposure of the site and the processes thereon to public view.
- Proportion of development visible – expresses the proportion of the development (the Scheme) that will be visible from the viewpoints: full, most, some, small amount, or none.
- Focus on Scheme due to proximity – is an indicator of the distance from the Scheme site and whether the viewpoint would focus on the development due to its proximity (i.e., it is the only thing to look at), or whether the Scheme is part of a panorama.

- Transient or sequential view – the principal receptors will have sequential views of the Scheme site. Transient views are those that pass quickly (like looking through a doorway as one walks past), and sequential views expose the receptor to different yet sequential views of the site. The latter allows the site to be viewed for a longer period of time and from different and changing perspectives.

Table 8.6: Summary of Scheme Site Visibility from the Viewpoint

Viewpoints (VP)	Distance from Scheme Site (plan distance)	Extent of Scheme Site Visibility	Proportion of Scheme Visible	Focus on Scheme Due to Proximity	Transient or Sequential view
VP 1: Triq ir-Ramlija, junction with Triq L-Industrija Kirkop (looking northeast)	37 m	Partial	40%	Proximity	Transient
VP 2: Triq il-Belt Valletta, Kirkop (looking northeast)	76 m	Partial	80%	Proximity	Transient
VP 3: Triq il-Industrija, Kirkop (looking northwest)	44 m	Partial	50%	Proximity	Transient
VP 4: Triq Valletta, Kirkop (looking northeast)	60 m	Partial	40%	Proximity	Transient
VP 5: Triq il-Madonna tad-Dawl, Kirkop (looking south)	21 m	Partial	20%	Proximity	Transient
VP 6: Triq il-Madonna tad-Dawl, Kirkop (looking south)	10 m	Partial	10%	Proximity	Transient
VP 7: Gnien Il-Gibjun, Zurrieq (looking northeast)	3.2 km	Partial	<5%	Panorama	Sequential
VP 8: Vjal Ix-Xarolla, Zurrieq / Safi (looking northeast)	1.8 km	Partial	<5%	Panorama	Transient

CHANGES IN THE LANDSCAPE AND VISUAL AMENITY

- 8.41. Changes to the landscape and visual amenity of the ZTV are anticipated as a result of the Scheme. This section focuses on the likely impacts of the Scheme on landscape and visual amenity, and points to possible mitigation measures, where relevant.

Changes in the Landscape and their Significance

- 8.42. The changes to the landscape during the construction and operation of the Scheme are considered together. In terms of landscape character, the impacts likely to occur as a result of the operation of the Scheme were assessed. **Table 8.7** details the landscape assessment.

Table 8.7 Changes in Landscape Character and Significance of the Impacts

Location	Changes	Effects & Significance
LLT: Quarrying and Industrial Area	The Scheme will serve to give the site a more urban appearance, where the existing Elbros Construction Yard is relatively well screened in the landscape. The Scheme will have a lower height profile and be less visually noticeable than the adjacent ST Microelectronics complex and will supplement the existing mature planting around the site. The Scheme will affect a medium-scale change to this LLT.	Medium-scale change to a LLT of low sensitivity Impact: Minor significance
LLT: Malta International Airport	The Scheme will serve to give the site a more urban appearance, where the existing Elbros Construction Yard is relatively well screened in the landscape. However, given the scale and landscape character of the MIA, the Scheme will affect a small-scale change to this LLT.	Small-scale change to a LLT of low sensitivity. Impact: Minor significance
LLT: Settlements – Kirkop and Mqabba	The Scheme site is relatively distanced from these settlements. Given the distance, the scale and height profile of the Scheme, and the intervening landscape character, the Scheme will not affect a change to this LLT.	No changes Impact: Not significant
LLT: Rural Area	The Scheme site is relatively distanced from the more sensitive parts of this LLT. Given the distance, the scale and height profile of the Scheme, and the intervening landscape character, the Scheme will not affect a change to this LLT.	No changes Impact: Not significant

Changes in Visual Amenity and their Significance

- 8.43. The assessment of the impact of the Scheme on the visual amenity of the ZTV takes account of the:
- Scale of change resulting from the Scheme;
 - Degree of contrast or integration resulting from the change;
 - Duration and nature of the effect;
 - Angle of view in relation to the main activity of the receptor;
 - Distance of the viewpoint from the Scheme site;
 - Extent of the area over which the changes would be visible; and
 - Number and susceptibility of sensitive receptors who may experience the views.
- 8.44. The changes to the visual amenity and their significance are described in **Table 8.8**. The impact of the Scheme on the visual amenity of the area portrayed in the photographs and photomontages varies depending on the viewpoint. Moderate adverse impacts have been identified in respect of the changes to the close proximity views from Triq ir-Ramlija, Triq L-Industrija, Triq Valletta, and Triq il-Belt Valletta (VPs 1, 2, 3 and 4). A moderate beneficial impact has been identified in respect of the change in the close proximity view from Triq il-Madonna tad-Dawl, approaching the roundabout (VP 6). A minor to moderate adverse impact has been identified in respect of the change to the close proximity view from further north on Triq il-Madonna tad-Dawl (VP 5).

MITIGATION

- 8.45. While moderate adverse impacts have been identified in respect of the changes to the views from VPs 1 to 4, no mitigation measures are being recommended. This is for two related reasons. Firstly, the existing building form on the Scheme site is relatively limited, and it is low-lying; the boundary wall essentially serves to screen much of the existing development from view. Given these existing conditions, the Scheme has the impact of affecting a large-scale change on the views from these proximity viewpoints. However, as identified, the height and massing of the Scheme renders it visually imperceptible in the longer-distance views; the viewshed is restricted to the immediate surrounding area. Secondly, the development context in this surrounding area includes the ST Microelectronics complex, where there is a considerably taller building form and a bigger massing relative to the Scheme. This is pertinent to consideration of how the change in the close proximity views will be perceived by the sensitive receptors.

RESIDUAL IMPACTS

- 8.46. In the absence of mitigation, the residual visual impacts of moderate significance would remain.

SUMMARY OF THE CHANGES IN THE LANDSCAPE AND VISUAL AMENITY

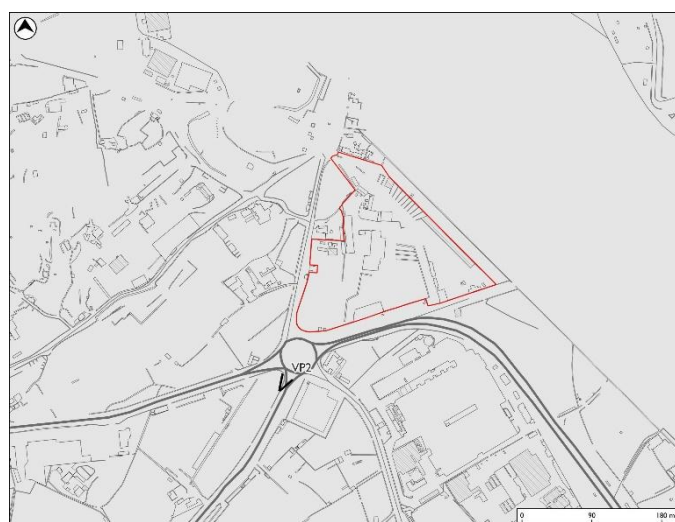
8.47. **Table 8.9** summarises the landscape and visual amenity impact assessment.

Table 8.8: Changes to the Visual Amenity

Viewpoint I (4 April 2026)	
Location: Triq ir-Ramlija, junction with Triq L-Industrija Kirkop (looking northeast)  Key Features Proximity view looking northeast towards the Scheme site from the junction of Triq ir-Ramlija and Triq L-Industrija, on the roundabout also on the junction with Triq Valletta, Triq il-Belt Valletta, and Triq il-Madonna tad-Dawl. A masonry boundary wall encloses the Scheme site. The existing buildings / vehicles / plant within the Scheme site are just visible above the wall; overall the view is open and the site appears relatively undeveloped from this viewpoint. The foreground view is of the eastern side of the roundabout and Triq L-Industrija, with the boundary wall of the ST Microelectronics complex on the extreme right. The road signage, electricity poles and power lines are detracting features in the view. The mature trees bordering the Scheme site, together with the shrubbery on the right of the image, are pleasant features in the view. Low intrinsic value, low visual amenity	 VIEWPOINT REFERENCE 01 YR 0 10 Distance to proposed development: 37m Camera height: 1.5m Date & time of photograph: 04-Apr-26; 0838 Camera Type: EOS 5DS VFOV: 46.4° HFOV: 65.5° Date: 15-Apr-26 EXISTING VIEW The image contained on this page is not representative of scale and distance from the actual viewpoint and shows the proposed development in its context only
Sensitive Receptors Drivers and their passengers, pedestrians, runners / joggers, cyclists Low to medium sensitivity, low to high numbers	
Change to Visual Amenity The Scheme changes the view by introducing a new building and raising the height and massing of development on the Scheme site. The existing mature trees bordering the site serve to somewhat visually integrate the Scheme, and the Scheme incorporates new planting at ground level and on the terrace at second floor level, which also facilitates this. Nevertheless, the new building is noticeable and serves to somewhat 'urbanise' the site as viewed from this viewpoint.	
Impact A large-scale change, affecting a view of low intrinsic value and visual amenity, and impacting on low to high numbers of low to medium sensitivity receptors. Impact: Moderate Significance	 VIEWPOINT REFERENCE 01 YR 0 10 Distance to proposed development: 37m Camera height: 1.5m Date & time of photograph: 04-Apr-26; 0838 Camera Type: EOS 5DS VFOV: 46.4° HFOV: 65.5° Date: 15-Apr-26 PROPOSED VIEW The image contained on this page is not representative of scale and distance from the actual viewpoint and shows the proposed development in its context only

Viewpoint 2 (29 October 2025)

Location: Triq il-Belt Valletta, Kirkop (looking northeast)



Key Features

Proximity view looking northeast towards the Scheme site from where Triq il-Belt Valletta approaches the roundabout on the junction with Triq Valletta, Triq L-Industrija, Triq il-Madonna tad-Dawl, Triq ir-Ramlja.

A masonry boundary wall encloses the Scheme site. The existing buildings / vehicles / plant within the Scheme site are just visible above the wall; overall the view is open and the site appears relatively undeveloped from this viewpoint.

The foreground view is of the roundabout. The mature trees bordering the Scheme site, together with the shrubbery on the roundabout, are key and pleasant features in the view.

Low intrinsic value, medium visual amenity

Sensitive Receptors

Drivers and their passengers, pedestrians, runners / joggers, cyclists

Low to medium sensitivity, low to high numbers

Change to Visual Amenity

The Scheme changes the view by introducing a new building and raising and height and massing of development on the Scheme site. The existing mature trees bordering the site, together with the shrubbery within the roundabout, somewhat serve to visually integrate the Scheme, and the Scheme incorporates planting on the terrace at second floor level, which also facilitates this. Nevertheless, the new building is noticeable in the view and serves to somewhat 'urbanise' the site as viewed from this viewpoint.

Impact

A large-scale change, affecting a view of low intrinsic value and medium visual amenity, and impacting on low to high numbers of low to medium sensitivity receptors.

Impact: Moderate Significance



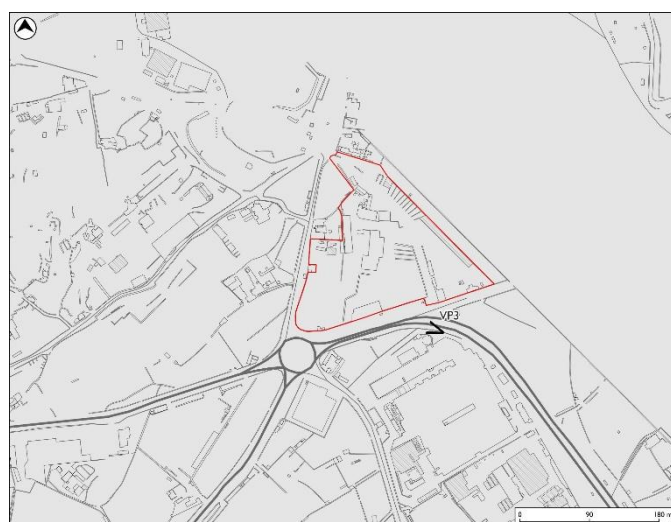
VIEWPOINT REFERENCE 02 YR 0 10 Distance to proposed development: 76m Camera height: 1.5m Date & time of photograph: 29-Oct-25; 1041 Camera Type: EOS 5DS VFOV: 27.0° HFOV: 39.6°
EXISTING VIEW
The image contained on this page is not representative of scale and distance from the actual viewpoint and shows the proposed development in its context only
Date: 05-Nov-25



VIEWPOINT REFERENCE 02 YR 0 10 Distance to proposed development: 76m Camera height: 1.5m Date & time of photograph: 29-Oct-25; 1041 Camera Type: EOS 5DS VFOV: 27.0° HFOV: 39.6°
PROPOSED VIEW
The image contained on this page is not representative of scale and distance from the actual viewpoint and shows the proposed development in its context only
Date: 05-Nov-25

Viewpoint 3 (29 October 2025)

Location: Triq il-Industrija, Kirkop (looking northwest)



Key Features

Proximity view looking northwest towards the Scheme site from Triq il-Industrija.

A masonry boundary wall encloses the Scheme site, with the blue and white painted gateway to the site visible on the right. The existing buildings / vehicles / plant within the Scheme site are just visible above the wall. Overall, the view is open and the site appears relatively undeveloped from this viewpoint.

The foreground view is of the road, parked cars, road signage and electricity poles, which are detracting features in the view. The mature trees bordering the Scheme site, together with the shrubs bordering the road, are pleasant features in the view.

Low intrinsic value, low visual amenity

Sensitive Receptors

Drivers and their passengers, pedestrians, runners / joggers, cyclists

Low to medium sensitivity, low to high numbers

Change to Visual Amenity

The Scheme changes the view by introducing a new building and raising and height and massing of development on the site. The existing mature trees bordering the Scheme site, together with the low shrubbery, somewhat serve to visually integrate the Scheme, and the Scheme incorporates planting on the terrace at second floor level, as well as at ground level, which also facilitates this. Nevertheless, the new building is noticeable in the view and serves to somewhat 'urbanise' the site as viewed from this viewpoint.

Impact

A large-scale change, affecting a view of low intrinsic value and visual amenity, and impacting on low to high numbers of low to medium sensitivity receptors.

Impact: Moderate Significance



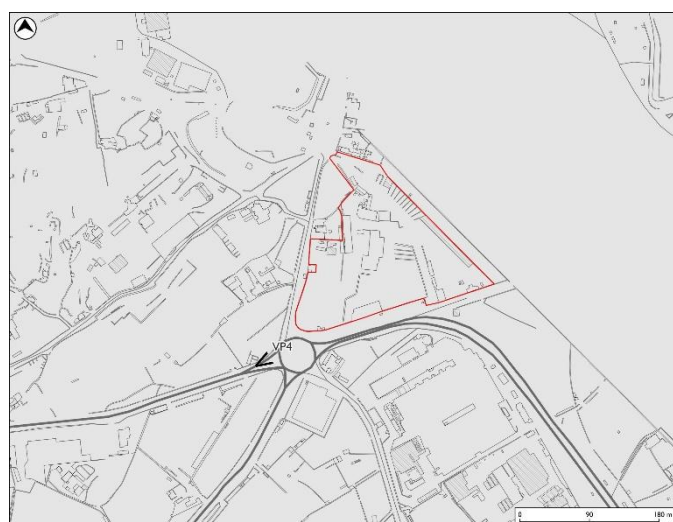
VIEWPOINT REFERENCE 03 YR 0 10 Distance to proposed development: 44m Camera height: 1.5m Date & time of photograph: 29-Oct-25; 1028 Camera Type: EOS 5DS VFOV: 46.4° HFOV: 65.5°
EXISTING VIEW
The image contained on this page is not representative of scale and distance from the actual viewpoint and shows the proposed development in its context only
Date: 05-Nov-25



VIEWPOINT REFERENCE 03 YR 0 10 Distance to proposed development: 44m Camera height: 1.5m Date & time of photograph: 29-Oct-25; 1028 Camera Type: EOS 5DS VFOV: 46.4° HFOV: 65.5°
PROPOSED VIEW
The image contained on this page is not representative of scale and distance from the actual viewpoint and shows the proposed development in its context only
Date: 05-Nov-25

Viewpoint 4 (29 October 2025)

Location: Triq Valletta, Kirkop (looking northeast)



Key Features

Proximity view looking northeast towards the Scheme site from where Triq Valletta approaches the roundabout on the junction with Triq il-Belt Valletta, Triq L-Industrija, Triq il-Madonna tad-Dawl, and Triq ir-Ramlija.

A masonry boundary wall encloses the Scheme site. The existing buildings / vehicles / plant within the Scheme site are just visible above the wall; overall the view is open and the site appears relatively undeveloped from this viewpoint.

The foreground view is of the northern part of the roundabout and the junction with Triq L-Industrija and Triq il-Madonna tad-Dawl. The road signage and electricity poles are detracting features in the view. The mature trees bordering the Scheme site, together with the shrubbery within the roundabout, are pleasant features in the view.

Low intrinsic value, low visual amenity

Sensitive Receptors

Drivers and their passengers, pedestrians, runners / joggers, cyclists

Low to medium sensitivity, low to high numbers

Change to Visual Amenity

The Scheme changes the view by introducing a new building and raising and height and massing of development on the site. The existing mature trees bordering the Scheme site, together with the shrubbery within the roundabout, somewhat serve to visually integrate the Scheme, and the Scheme incorporates planting on the terrace at second floor level which also facilitates this. Nevertheless, the new building is noticeable in the view and serves to somewhat 'urbanise' the site as viewed from this viewpoint

Impact

A large-scale change, affecting a view of low intrinsic value and visual amenity, and impacting on low to high numbers of low to medium sensitivity receptors.

Impact: Moderate Significance



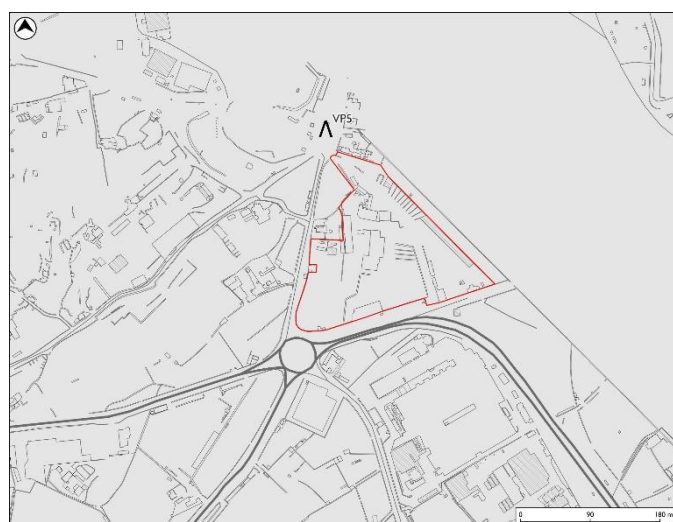
VIEWPOINT REFERENCE 04 YR 0 10 Distance to proposed development: 60m Camera height: 1.5m Date & time of photograph: 29-Oct-25; 1050 Camera Type: EOS 5DS VFOV: 27.0° HFOV: 39.6°
EXISTING VIEW
The image contained on this page is not representative of scale and distance from the actual viewpoint and shows the proposed development in its context only
Date: 05-Nov-25



VIEWPOINT REFERENCE 04 YR 0 10 Distance to proposed development: 60m Camera height: 1.5m Date & time of photograph: 29-Oct-25; 1050 Camera Type: EOS 5DS VFOV: 27.0° HFOV: 39.6°
PROPOSED VIEW
The image contained on this page is not representative of scale and distance from the actual viewpoint and shows the proposed development in its context only
Date: 05-Nov-25

Viewpoint 5 (29 October 2025)

Location: Triq il-Madonna tad-Dawl, Kirkop (looking south)



Key Features

Proximity view looking south towards the Scheme site on Triq il-Madonna tad-Dawl.

A masonry boundary wall encloses the Scheme site in part, with a low rubble wall marking the extent of the site in the centre of the image. The existing buildings / vehicles / plant within the site are just visible above the masonry wall on the left. The mature vegetation within the site is visible on the right of this. Overall, the view is open and the site appears relatively undeveloped from this viewpoint.

The townscape of Kirkop is just visible in the background, on the right of the image. The foreground view is of the road; the electricity poles and overhead wires are detracting features in the view. The mature vegetation within the Scheme site, together with the traditional stone-built structure and rubble wall, are key and pleasant features in the view.

Low intrinsic value, low visual amenity

Sensitive Receptors

Drivers and their passengers, pedestrians, runners / joggers, cyclists

Low to medium sensitivity, low to medium numbers

Change to Visual Amenity

The Scheme changes the view by introducing a new building and raising and height and massing of development on the site. The existing mature vegetation within the Scheme site, which is to be retained, together with new planting on the site boundary on the left, somewhat serve to visually integrate the Scheme. Nevertheless, the new building is noticeable in the view and serves to somewhat 'urbanise' the site as viewed from this viewpoint.

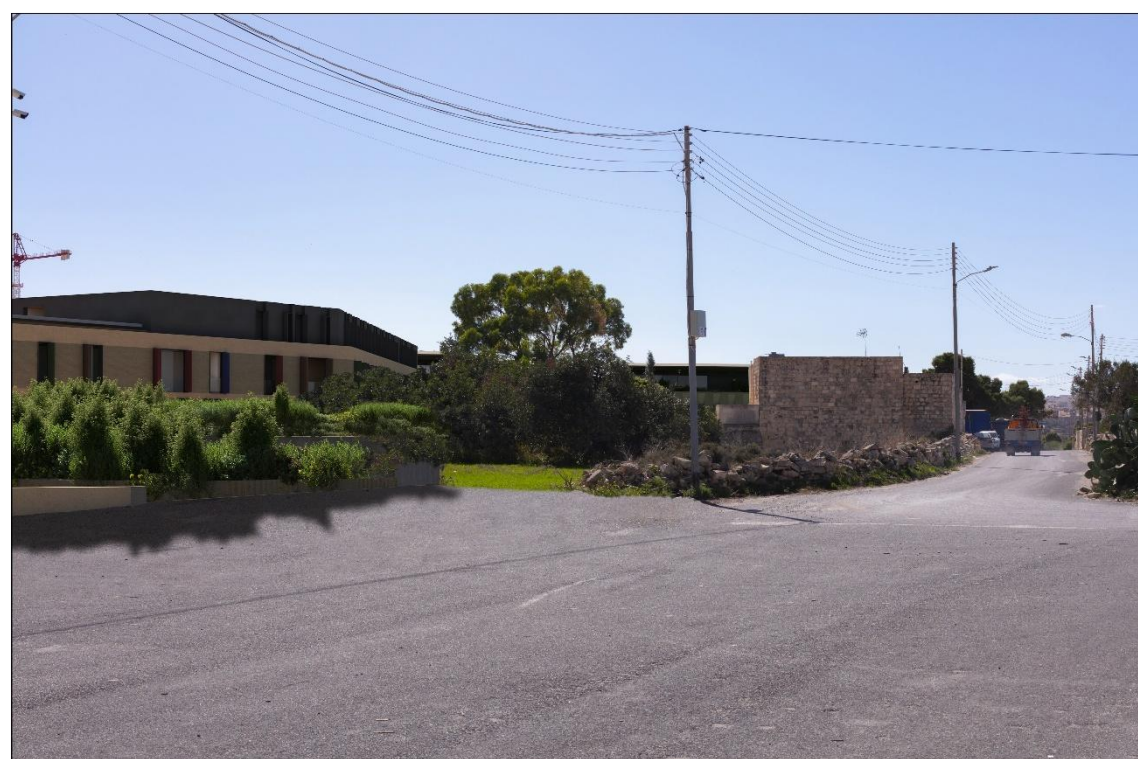
Impact

A medium-scale change, affecting a view of low intrinsic value and visual amenity, and impacting on low to medium numbers of low to medium sensitivity receptors.

Impact: Minor to Moderate Significance



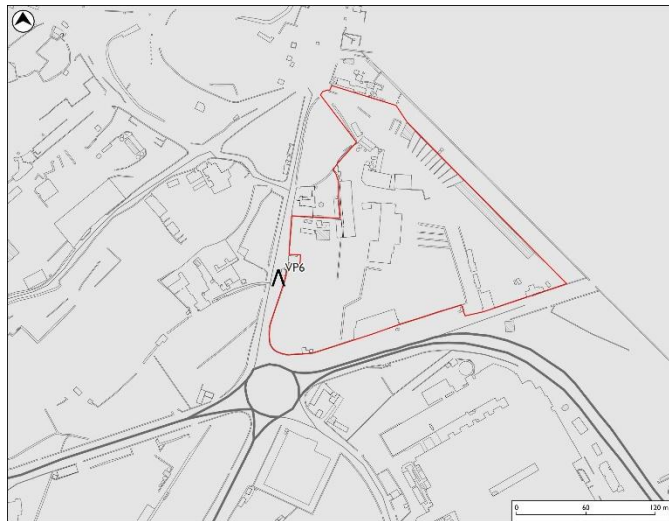
VIEWPOINT REFERENCE 05 YR 0 10 Distance to proposed development: 21m Camera height: 1.5m Date & time of photograph: 29-Oct-25; 1108 Camera Type: EOS 5DS VFOV: 27.0° HFOV: 39.6°
EXISTING VIEW
The image contained on this page is not representative of scale and distance from the actual viewpoint and shows the proposed development in its context only
Date: 05-Nov-25
Photomontage prepared by V&S STUDIOS LIMITED



VIEWPOINT REFERENCE 05 YR 0 10 Distance to proposed development: 21m Camera height: 1.5m Date & time of photograph: 29-Oct-25; 1108 Camera Type: EOS 5DS VFOV: 27.0° HFOV: 39.6°
PROPOSED VIEW
The image contained on this page is not representative of scale and distance from the actual viewpoint and shows the proposed development in its context only
Date: 05-Nov-25
Photomontage prepared by V&S STUDIOS LIMITED

Viewpoint 6 (29 October 2025)

Location: Triq il-Madonna tad-Dawl, Kirkop (looking south)



Key Features

Proximity view looking south towards the Scheme site from where Triq il-Madonna tad-Dawl approaches the roundabout on the junction with Triq il-Belt Valletta, Triq Valletta, Triq L-Industrija, and Triq ir-Ramlja.

A rubble boundary wall encloses the Scheme site and screens the interior of the site from view; only the mature vegetation within the site is visible above the wall. Overall, the view is open and the site appears undeveloped from this viewpoint.

The townscape of Kirkop is just visible in the background, on the right of the image. The foreground view is of the road; the safety barrier, electricity poles, and overhead wires are detracting features in the view. The mature vegetation outside of and within the Scheme site, together with the rubble walls bordering the site and on the opposite side of the road, are key and pleasant features in the view.

Low intrinsic value, medium visual amenity

Sensitive Receptors

Drivers and their passengers, pedestrians, runners / joggers, cyclists

Low to medium sensitivity, low to medium numbers

Change to Visual Amenity

The Scheme changes the view by opening up the site and introducing new mature planting alongside the road, supplementing the existing vegetation. This new planning serves to significantly screen the new building within the site, only the roof of which is just visible on the left of the image. The new landscaping also serves to somewhat improve the view from this viewpoint, by softening the townscape.

Impact

A medium-scale positive change, affecting a view of low intrinsic value and medium visual amenity, and impacting on low to medium numbers of low to medium sensitivity receptors.

Impact: Moderate Positive Significance



VIEWPOINT REFERENCE 06 YR 0 10 Distance to proposed development: <10m Camera height: 1.5m Date & time of photograph: 29-Oct-25; 1102 Camera Type: EOS 5DS VFOV: 46.4° HFOV: 65.5°
EXISTING VIEW
The image contained on this page is not representative of scale and distance from the actual viewpoint and shows the proposed development in its context only
Date: 05-Nov-25



VIEWPOINT REFERENCE 06 YR 0 10 Distance to proposed development: <10m Camera height: 1.5m Date & time of photograph: 29-Oct-25; 1102 Camera Type: EOS 5DS VFOV: 46.4° HFOV: 65.5°
PROPOSED VIEW
The image contained on this page is not representative of scale and distance from the actual viewpoint and shows the proposed development in its context only
Date: 05-Nov-25

Viewpoint 8 (29 October 2025)

Location: Vjal Ix-Xarolla, Zurrieq / Safi (looking northeast)



Key Features

Panoramic view looking northeast towards the Scheme site from Vjal Ix-Xarolla, on the interface of Zurrieq and Safi. The Scheme site is just visible in the centre of the image.

The view takes in the edge of the Zurrieq Development Zone in the foreground with extensive views across the rural land between Zurrieq / Safi and Kirkop and beyond to the eastern coast of Malta, including views of the sea. The skyline views take in Mercury House and Portomaso in St Julians, the ST Tower in Gzira, and Tigne Point in Sliema. The Malta International Airport complex is visible in the centre of the image.

The road signage and carriageway separation bollards in the foreground are detracting features in the view.

Low intrinsic value, low visual amenity

Sensitive Receptors

Drivers and their passengers, pedestrians, runners / joggers, cyclists

Low to medium sensitivity, low to high numbers

Change to Visual Amenity

The Scheme is barely perceptible in this panoramic view given the distance and the townscape and landscape context. The Scheme does not break the skyline.

Impact

An imperceptible change, affecting a view of low intrinsic value and visual amenity, and impacting on low to high numbers of low to medium sensitivity receptors.

Impact: No significance



VIEWPOINT REFERENCE 08 YR 0 10 Distance to proposed development: 1.8km Camera height: 1.5m Date & time of photograph: 29-Oct-25; 1007 Camera Type: EOS 5DS VFOV: 18.2° HFOV: 27.0°
EXISTING VIEW
This image must be viewed at a comfortable arm's length Date: 05-Nov-25



VIEWPOINT REFERENCE 08 YR 0 10 Distance to proposed development: 1.8km Camera height: 1.5m Date & time of photograph: 29-Oct-25; 1007 Camera Type: EOS 5DS VFOV: 18.2° HFOV: 27.0°
PROPOSED VIEW
This image must be viewed at a comfortable arm's length Date: 05-Nov-25

Table 8.9: Summary of Impacts on Landscape and Visual Amenity

Asset Impacted	Beneficial /Adverse/ Neutral	Nature, Scale and Type of Impact						Probability of impact occurring (Likely / Unlikely / Remote / Uncertain)	Significance of impact (Major/ Minor/Not significant)	Proposed mitigation measures	Significance of residual impact (Major/ Minor/Not significant)
		Const'n /Oper'n	Extent of impact (Nat./ Local/ Site)	Direct/ Indirect	S-term/ L-term	Perm/ Temp	Revers/ Irrevers				
Landscape Character											
LLT: Quarrying and Industrial Area	Adverse	Oper'n	Local	Direct	L-term	Perm	Revers	Likely	Minor	-	-
LLT: Malta International Airport	Adverse	Oper'n	Local	Direct	L-term	Perm	Revers	Likely	Minor	-	-
LLT: Settlements – Kirkop and Mqabba	Neutral	Oper'n	Local	Direct	L-term	Perm	Revers	Likely	Not significant	-	-
LLT: Rural Area	Neutral	Oper'n	Local	Direct	L-term	Perm	Revers	Likely	Not significant	-	-
Visual Amenity											
VP 1: Triq ir-Ramlja, junction with Triq L-Industrija Kirkop (looking northeast)	Adverse	Oper'n	Local	Direct	L term	Perm	Revers.	Likely	Moderate	-	-
VP 2: Triq il-Belt Valletta, Kirkop (looking northeast)	Adverse	Oper'n	Local	Direct	L term	Perm	Revers.	Likely	Moderate	-	-

Asset Impacted	Beneficial /Adverse/ Neutral	Nature, Scale and Type of Impact						Probability of impact occurring (Likely / Unlikely / Remote / Uncertain)	Significance of impact (Major/ Minor/Not significant)	Proposed mitigation measures	Significance of residual impact (Major/ Minor/Not significant)
		Const'n /Oper'n	Extent of impact (Nat./ Local/ Site)	Direct/ Indirect	S-term/ L-term	Perm/ Temp	Revers/ Irrevers				
VP 3: Triq il-Industrija, Kirkop (looking northwest)	Adverse	Oper'n	Local	Direct	L term	Perm	Revers.	Likely	Moderate		
VP 4: Triq Valletta, Kirkop (looking northeast)	Adverse	Oper'n	Local	Direct	L term	Perm	Revers.	Likely	Moderate		
VP 5: Triq il-Madonna tad-Dawl, Kirkop (looking southeast)	Adverse	Oper'n	Local	Direct	L term	Perm	Revers.	Likely	Minor to Moderate		
VP 6: Triq il-Madonna tad-Dawl, Kirkop (looking southeast)	Beneficial	Oper'n	Local	Direct	L term	Perm	Revers.	Likely	Moderate	-	-
VP 7: Gnien Il-Gibjun, Zurrieq (looking northeast)	Neutral	Oper'n	Local	Direct	L term	Perm	Revers.	Likely	Not Significant	-	-
VP 8: Vjal Ix-Xarolla, Zurrieq / Safi (looking northeast)	Neutral	All	Local	Direct	L term	Perm	Revers.	Likely	Not Significant	-	-

9. SUMMARY OF KEY IMPACTS, INTERACTION BETWEEN IMPACTS AND MITIGATION

INTRODUCTION

- 9.1. The purpose of this chapter is to provide a summary of the key environmental impacts, their interaction and cumulative effects, and their mitigation. The chapter addresses the requirements set out in the Terms of Reference (ToR) to describe mitigation measures to “*prevent, eliminate, reduce or offset (as relevant) the identified significant adverse effects of the project*” and to identify cumulative and residual impacts. The chapter concludes with a summary of the mitigation measures proposed in the EIA Report, as well as a description of the required authorisations.

SUMMARY OF KEY IMPACTS

- 9.2. **Chapters 5 to 8** of the EIA Report describe the predicted impacts of the Scheme in relation to *geo-environment, air quality, cultural heritage, and, landscape and visual amenity* in accordance with the environmental topic areas identified in the ToR.
- 9.3. For each predicted impact, an assessment has been made as to whether the impact is likely to be of major, moderate (as relevant) or minor significance, or of no significance; the criteria that were used to judge significance are described in each of the chapters. Predicted major, moderate (as relevant), and minor impacts have been identified, and, in the case of negative impacts, there is a description of how these impacts could be mitigated. All the residual impacts identified are summarised in **Table 9.1** at the end of this Chapter.
- 9.4. The assessment identified one major negative impact, related to geo-environment and arising from the excavation of the site for the Scheme.
- 9.5. The impacts of the Scheme, relevant mitigation measures, and the residual impacts are discussed hereunder.

Geo-environment

- 9.6. As mentioned, the impact on geological resources is considered to be of major negative significance, since the Scheme involves the extraction of 337,000 m³ of rock from the site.
- 9.7. The predicted impact of the Scheme on ground water contamination is considered to be of no significance. The proposed activities at the Scheme site are unlikely to result in groundwater impacts given the in-built measures designed to avoid contamination of ground and surface water, including the collection of rainwater.
- 9.8. The Scheme will increase the extent of impermeable surfaces and therefore reduce local infiltration and groundwater recharge. However, given the site's existing condition and limited remaining natural soils, the impact on the local water cycle is considered to be of minor adverse significance, subject to the incorporation of infiltration measures and sustainable drainage features.

- 9.9. Given the large excavation volume, it is likely that there will be significant areas of bare ground that will be exposed. Malta's weather during the winter means that there could be short-duration, high-intensity rainfall events. During excavation and construction works, temporary impacts may arise through sediment-laden runoff, transport of fine limestone particles, and pollution of downstream drainage systems. Given the scale of excavation proposed, temporary, localised and reversible impacts are expected. With the implementation of sediment control measures, settlement facilities, phased excavation works and appropriate stockpile management, impacts on surface water quality are expected to be of minor adverse significance.
- 9.10. During operation, the Scheme will increase both runoff volumes and peak discharge rates, due to the increase in impermeable surfaces. Without mitigation, this could increase flood risk and runoff concentration within the wider Kirkop-airport drainage catchment. However, the site lies outside of major valley systems and flood corridors and, with appropriate attenuation tanks, controlled discharge systems and sustainable drainage measures, the impact is expected to be of minor significance.

Emissions to Air

- 9.11. The impact of traffic generated by the Scheme was assessed for the years 2033 and 2038, when the Scheme will be built and when it is fully operational. The results illustrate that the impact from Scheme traffic on NO₂ annual ambient air concentrations, using the significance criteria provided by ERA, is negligible - both in 2033 and 2038. Additionally, since the annual mean limit value of 40 µg/m³ for NO₂ is not exceeded under any scenario, it is likely that the allowed number of hourly exceedances will not be exceeded either.
- 9.12. With respect to PM₁₀ ambient air concentrations, the results illustrate that the impact from Scheme traffic on the PM₁₀ annual average is negligible under all scenarios considered (both in 2033 and 2038), with the exception of SR3, where the impact is slight. With regards to the PM₁₀ daily limit, there are some moderate impacts at sensitive receptors 3, 4 and 5 and a slight impact at receptor GDJ I (ERA's monitoring station); the remaining receptors have a negligible impact in both 2033 and 2038.
- 9.13. Since the results show a negligible to moderate impact on ambient air quality, it is recommended that a Green Travel Plan (GTP) is implemented for the operation of the Scheme. The residual impacts following the implementation of the GTP would depend on the effectiveness of the implementation of the Plan measures.

Cultural Heritage

- 9.14. There are no scheduled features within the Scheme site or in its close proximity. There are two rubble walls within the Scheme site, one of which will be affected by the development. The architects have agreed to dismantle this rubble wall and rebuild it once the works are completed. The only two other features within the Scheme footprint are a rock-cut feature and quarry remains. During a site visit held with the architects, the Applicant and Cultural Heritage Consultants it was noted that the excavation will not extend to reach the features, which are located on the

boundary of the Scheme site. Hence, these features will not be lost and the impact is therefore judged to be not significant.

- 9.15. The Scheme will not result in the demolition of any significant features of cultural value that contribute to the cultural landscape of the area. However, while the Scheme will rehabilitate the site itself, the cultural landscape of the area (mostly vernacular in nature) will be affected. The impact is considered to be of minor significance.

Landscape and Visual Amenity

- 9.16. The impact on landscape character is considered to be of no significance to minor significance. The impacts of minor significance refer to the change in the Quarrying and Industrial Area and Malta International Airport Local Landscape Tracts (LLT). No impacts are anticipated in respect of the Kirkop, Mqabba and Rural Area LLTs.
- 9.17. The impact of the Scheme on the visual amenity of the area varies, depending on the viewpoint. Moderate adverse impacts have been identified in respect of the changes to the close proximity views from Triq ir-Ramlja, Triq L-Industrija, Triq Valletta, and Triq il-Belt Valletta (VPs 1, 2, 3 and 4). A moderate beneficial impact has been identified in respect of the change in the close proximity view from Triq il-Madonna tad-Dawl, approaching the roundabout (VP 6). A minor to moderate adverse impact has been identified in respect of the change to the close proximity view from further north on Triq il-Madonna tad-Dawl (VP 5).

INTERACTION OF IMPACTS

- 9.18. The interaction of impacts with the current baseline is described in **Chapters 5 to 8** of the EIA Report. The interactions are summarised in **Table 9.1** below. The interaction between impacts describes the potential cumulative or reactive nature of the various disturbances caused by the Scheme during construction and operation.
- 9.19. As mentioned during construction, the potential major impact relates to the impact on the geo-environment from excavation. Other impacts relate to noise and dust generation during construction. Again, it is noted that the current Scheme site operations generate dust.
- 9.20. During operation, impacts relate mainly to the increase in traffic generation, with potential impacts on traffic congestion, as well as impacts on air quality.

CUMULATIVE IMPACTS

- 9.21. The various impacts identified in **Chapters 5 to 8** of the EIA Report were assessed in the context of the existing baseline (encompassing the past and present context). Baseline studies were undertaken when the hotel was not operational.
- 9.22. Cumulative impacts are those that result from incremental changes caused by other past, present, or reasonably foreseeable actions together with the Scheme. Given the location of the Scheme and the change of use from a construction yard to a commercial complex, cumulative impacts from other similar developments are not

foreseeable.

MITIGATION

- 9.23. The EIA Report, including its supporting Technical Appendices, reports the findings of the EIA, in accordance with the ToR. Where appropriate, mitigation measures have been recommended and these have been communicated to and agreed by the Applicant. These mitigation measures are described at the end of each topic area chapter, and they are summarised in **Table 9.1**. Some of the mitigation measures are already taken account of in the Scheme design (in-built mitigation); other mitigation measures are recommended arising from the impact assessment.
- 9.24. The following is the list of mitigation measures. It would be appropriate for, and it is recommended that, these mitigation measures be taken account of in the conditions of any eventual development permit.
- Earthworks should, where practicable, be phased to minimise the area of exposed ground at any one time.
 - Temporary drainage channels and cut-off drains should be installed to divert clean runoff away from excavation areas.
 - Sediment traps, settlement tanks or silt fences should be installed where runoff may carry suspended solids.
 - Stockpiles of soil and excavated material should be located away from drainage pathways and protected from erosion by sheeting or temporary stabilisation.
 - Wheel-wash facilities and road-sweeping measures should be implemented where required.
 - Particular attention should be given to runoff management during the winter months and before forecast heavy rainfall events.
 - The extent of impermeable surfaces should be minimised wherever practicable, through the incorporation of landscaped areas, planting beds and permeable surfaces.
 - Permeable paving systems should be considered for parking areas, pedestrian zones, and other low-traffic surfaces, to promote infiltration and reduce runoff generation.
 - Areas of existing soil suitable for reuse should be stripped, stored separately and reused in landscaping works.
 - Landscaping schemes should maximise vegetated surfaces and include native drought-resistant species capable of enhancing soil permeability and evapotranspiration.
 - Opportunities for infiltration-based Sustainable Drainage Systems (SuDS),

including infiltration trenches, soakaways and bioretention areas, should be investigated during detailed design, subject to geotechnical and hydrogeological suitability.

- Attenuation systems designed to accommodate runoff generated during major storm events, including consideration of future climate change projections.
- Controlled discharge mechanisms limiting post-development runoff rates to existing or pre-development levels.
- Underground attenuation tanks, oversized pipe networks or other storage facilities capable of temporarily retaining stormwater during peak rainfall events.
- Rainwater harvesting systems for irrigation and non-potable water uses to reduce runoff volumes and improve water resource efficiency.
- A maintenance programme ensuring the continued operation and effectiveness of stormwater infrastructure.
- Where feasible, the development should adopt a SuDS approach incorporating:
 - Permeable pavements;
 - Swales and vegetated drainage channels;
 - Rain gardens and bioretention systems;
 - Infiltration trenches;
 - Green roofs where structurally feasible.
- Formulation and implementation of a Green Travel Plan for the operation of the Scheme.
- Before works commence, the site should be cleared of modern accretions, loose soil and rubble to expose the bedrock and identify any previously unknown archaeological remains. All clearing and bedrock clearance works should be archaeologically monitored, under the supervision of the Superintendent of Cultural Heritage (SCH).
- Cultural heritage features **IMD2026/002** and **IMD2026/003** are to be preserved *in situ* and protected from excavation, with ongoing monitoring to ensure their conservation. Feature **IMD2026/001** (remains of a rubble wall) is to be dismantled and rebuilt it once the works are completed
- Excavation works are to be supervised by qualified archaeologists, who would report to the SCH in the eventuality that uncharted artefacts are encountered.
- Given the vernacular nature of the cultural landscape of the area, it is recommended that soft landscaping including indigenous shrubs and rural

features such as rubble walls could be used to soften the transition between the development and the surrounding rural environment.

REQUIRED AUTHORISATIONS

- 9.25. The required authorisations are referred to in the relevant topic area chapters (**Chapters 5 to 8**).

Table 9.1: Summary of Impacts

Asset Impacted	Beneficial /Adverse	Nature, Scale and Type of Impact						Probability of Impact Occurring (Likely/ Unlikely/ Remote/ Uncertain)	Significance of Impact (Major/ Moderate/ Minor/Not Significant)	Proposed Mitigation Measures	Significance of Residual Impact (Major/ Moderate/ Minor/Not Significant)
		Constr'n /Oper'n	Extent of Impact (Nat/ Local /Site)	Direct/ Indirect	S'term/ L'term	Perm/ Temp	Revers/ Irrevers				
Geo-environment											
Mineral resources	Adverse	Constr'n	Local	Direct	Long-term	Perm	Irrevers	Likely	Major significance	Explore possibility of using some of the rock in blockwork. Use of excavated rock as fill material on site or off site Use of soil in landscaping on site	Major significance
Quality of ground water	Adverse	Constr'n / Oper'n	Local	Indirect	Short-term / Long-term	Perm	Irrevers	Likely	Minor significance	Measures to eliminate pollution and runoff during construction included in CMP and implemented on site	Not significant

Asset Impacted	Beneficial /Adverse	Nature, Scale and Type of Impact						Probability of Impact Occurring (Likely/ Unlikely/ Remote/ Uncertain)	Significance of Impact (Major/ Moderate/ Minor/Not Significant)	Proposed Mitigation Measures	Significance of Residual Impact (Major/ Moderate/ Minor/Not Significant)
		Constr'n /Oper'n	Extent of Impact (Nat/ Local /Site)	Direct/ Indirect	S'term/ L'term	Perm/ Temp	Revers/ Irrevers				
Surface water run-off patterns during construction	Adverse	Constr'n	Local	Direct	Long-term	Perm	Irrevers	Likely	Minor significance	Measures to eliminate pollution and runoff during construction included in CMP and implemented on site In-built design measures	Minor to not significant
Soil sealing following construction of the Scheme	Adverse	Constr'n	Local	Direct	Long-term	Perm	Irrevers	Likely	Minor significance	Measures to allow infiltration in open and landscaped areas	Minor significance

Predicted Impact	Beneficial /Adverse	Nature, Scale and Type of Impact						Probability of Impact Occurring (Likely/ Unlikely/ Remote/ Uncertain)	Significance of Impact (Major/ Moderate/ Minor/Not Significant)	Proposed Mitigation Measures	Significance of Residual Impact (Major/ Moderate/ Minor/Not Significant)
		Constr'n /Oper'n	Extent of Impact (Nat/ Local /Site)	Direct/ Indirect	S'term/ L'term	Perm/ Temp	Revers/ Irrevers				
Air Quality											
Impact of vehicle emissions on sensitive receptors – change in NO ₂ annual average	Neutral	Oper'n	Local	Direct	L-term	Perm	Revers	Likely	Not significant	None	
Impact of vehicle emissions on sensitive receptors – change in PM ₁₀ annual average	Adverse	Oper'n	Local	Direct	L-term	Perm	Revers	Likely	Not significant to slight	None	
Impact of vehicle emissions on sensitive receptors – change in number of daily PM ₁₀ exceedances	Adverse	Oper'n	Local	Direct	L-term	Perm	Revers	Likely	Not significant to moderate	Green Travel Plan for the Scheme operation	Not significant to moderate

Predicted Impact	Beneficial /Adverse	Nature, Scale and Type of Impact						Probability of Impact Occurring (Likely/ Unlikely/ Remote/ Uncertain)	Significanc e of Impact (Major/ Moderate/ Minor/Not Significant)	Proposed Mitigation Measures	Significance of Residual Impact (Major/ Moderate/ Minor/Not Significant)
		Constr'n /Oper'n	Extent of Impact (Nat/ Local /Site)	Direct/ Indirect	S'term/ L'term	Perm/ Temp	Revers/ Irrevers				
Cultural Heritage											
Loss or damage to recorded cultural heritage features	Adverse	Constr'n	Local / site	Direct	L-term	Perm	Irrevers	Likely	Minor	Consultation with SCH on recording / salvaging / removal of heritage features on site Monitoring of clearance and excavation works	No significance
Loss or damage to unrecorded archaeological or cultural heritage features within the site	Adverse	Constr'n	Site	Direct	L-term	Perm	Irrevers	Uncertain	Uncertain, depending on whether features are present, their level of importance, and the extent of any loss or damage	Archaeological monitoring during excavation / recording of features / salvaging of significant features or redesign of Scheme to retain features in situ if these are found	Uncertain (depending on whether features are present, their importance and the extent of any loss or damage)

Predicted Impact	Beneficial /Adverse	Nature, Scale and Type of Impact						Probability of Impact Occurring (Likely/ Unlikely/ Remote/ Uncertain)	Significance of Impact (Major/ Moderate/ Minor/Not Significant)	Proposed Mitigation Measures	Significance of Residual Impact (Major/ Moderate/ Minor/Not Significant)
		Constr'n /Oper'n	Extent of Impact (Nat/ Local /Site)	Direct/ Indirect	S'term/ L'term	Perm/ Temp	Revers/ Irrevers				
Landscape Character											
LLT: Quarrying and Industrial Area	Adverse	Oper'n	Local	Direct	L-term	Perm	Revers	Likely	Minor	-	-
LLT: Malta International Airport	Adverse	Oper'n	Local	Direct	L-term	Perm	Revers	Likely	Minor	-	-
LLT: Settlements – Kirkop and Mqabba	Neutral	Oper'n	Local	Direct	L-term	Perm	Revers	Likely	Not significant	-	-
LLT: Rural Area	Neutral	Oper'n	Local	Direct	L-term	Perm	Revers	Likely	Not significant	-	-

Predicted Impact	Beneficial /Adverse	Nature, Scale and Type of Impact						Probability of Impact Occurring (Likely/ Unlikely/ Remote/ Uncertain)	Significance of Impact (Major/ Moderate/ Minor/Not Significant)	Proposed Mitigation Measures	Significance of Residual Impact (Major/ Moderate/ Minor/Not Significant)
		Constr'n /Oper'n	Extent of Impact (Nat/ Local /Site)	Direct/ Indirect	S'term/ L'term	Perm/ Temp	Revers/ Irrevers				
Visual Amenity											
VP 1: Triq ir-Ramlja, junction with Triq L-Industrija Kirkop	Adverse	Oper'n	Local	Direct	L term	Perm	Revers.	Likely	Moderate	-	-
VP 2: Triq il-Belt Valletta, Kirkop	Adverse	Oper'n	Local	Direct	L term	Perm	Revers.	Likely	Moderate	-	-
VP 3: Triq il-Industrija, Kirkop	Adverse	Oper'n	Local	Direct	L term	Perm	Revers.	Likely	Moderate	-	-
VP 4: Triq Valletta, Kirkop	Adverse	Oper'n	Local	Direct	L term	Perm	Revers.	Likely	Moderate	-	-
VP 5: Triq il-Madonna tad-Dawl, Kirkop	Adverse	Oper'n	Local	Direct	L term	Perm	Revers.	Likely	Minor to Moderate	-	-
VP 6: Triq il-Madonna tad-Dawl, Kirkop	Beneficial	Oper'n	Local	Direct	L term	Perm	Revers.	Likely	Moderate	-	-
VP 7: Gnien Il-Gibjun, Zurrieq	Neutral	Oper'n	Local	Direct	L term	Perm	Revers.	Likely	Not Significant	-	-
VP 8: Vjal Ix-Xarolla, Zurrieq / Safi	Neutral	All	Local	Direct	L term	Perm	Revers.	Likely	Not Significant	-	-

Appendix I: A3 Photographs

Viewpoint I: Base Photo



Photomontages prepared by VR STUDIOS LIMITED

VIEWPOINT REFERENCE 01 YR 0 10 Distance to proposed development: 37m Camera height: 1.5m Date & time of photograph: 04-Apr-26; 0838 Camera Type: EOS 5DS VFOV: 46.4° HFOV: 65.5°
EXISTING VIEW Date: 15-Apr-26

The image contained on this page is not representative of scale and distance from the actual viewpoint and shows the proposed development in its context only

Viewpoint I: Photomontage



VIEWPOINT REFERENCE 01 YR 0 10 Distance to proposed development: 37m Camera height: 1.5m Date & time of photograph: 04-Apr-26; 0838 Camera Type: EOS 5DS VFOV: 46.4° HFOV: 65.5°
PROPOSED VIEW Date: 15-Apr-26

The image contained on this page is not representative of scale and distance from the actual viewpoint and shows the proposed development in its context only

Photomontages prepared by VR STUDIOS LIMITED

Viewpoint 2: Base Photo



Photomontages prepared by VR STUDIOS LIMITED

VIEWPOINT REFERENCE 02 YR 0 10 Distance to proposed development: 76m Camera height: 1.5m Date & time of photograph: 29-Oct-25; 1041 Camera Type: EOS 5DS VFOV: 27.0° HFOV: 39.6°
EXISTING VIEW Date: 05-Nov-25

The image contained on this page is not representative of scale and distance from the actual viewpoint and shows the proposed development in its context only

Viewpoint 2: Photomontage



Photomontages prepared by VR STUDIOS LIMITED

VIEWPOINT REFERENCE 02 YR 0 10 Distance to proposed development: 76m Camera height: 1.5m Date & time of photograph: 29-Oct-25; 1041 Camera Type: EOS 5DS VFOV: 27.0° HFOV: 39.6°
PROPOSED VIEW Date: 05-Nov-25

The image contained on this page is not representative of scale and distance from the actual viewpoint and shows the proposed development in its context only

Viewpoint 3: Base Photo



Photomontages prepared by VR STUDIOS LIMITED

VIEWPOINT REFERENCE 03 YR 0 10 Distance to proposed development: 44m Camera height: 1.5m Date & time of photograph: 29-Oct-25; 1028 Camera Type: EOS 5DS VFOV: 46.4° HFOV: 65.5°
EXISTING VIEW Date: 05-Nov-25

The image contained on this page is not representative of scale and distance from the actual viewpoint and shows the proposed development in its context only

Viewpoint 3: Photomontage



VIEWPOINT REFERENCE 03 YR 0 10 Distance to proposed development: 44m Camera height: 1.5m Date & time of photograph: 29-Oct-25; 1028 Camera Type: EOS 5DS VFOV: 46.4° HFOV: 65.5°
PROPOSED VIEW Date: 05-Nov-25

The image contained on this page is not representative of scale and distance from the actual viewpoint and shows the proposed development in its context only

Photomontages prepared by VR STUDIOS LIMITED

Viewpoint 4: Base Photo



VIEWPOINT REFERENCE 04 YR 0 10 Distance to proposed development: 60m Camera height: 1.5m Date & time of photograph: 29-Oct-25; 1050 Camera Type: EOS 5DS VFOV: 27.0° HFOV: 39.6°
EXISTING VIEW Date: 05-Nov-25

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Photomontages prepared by VR STUDIOS LIMITED

Viewpoint 4: Photomontage



VIEWPOINT REFERENCE 04 YR 0 10 Distance to proposed development: 60m Camera height: 1.5m Date & time of photograph: 29-Oct-25; 1050 Camera Type: EOS 5DS VFOV: 27.0° HFOV: 39.6°
PROPOSED VIEW
Date: 05-Nov-25

The image contained on this page is not representative of scale and distance from the actual viewpoint and shows the proposed development in its context only

Viewpoint 5: Base Photo



Photomontages prepared by VR STUDIOS LIMITED

VIEWPOINT REFERENCE 05 YR 0 10 Distance to proposed development: 21m Camera height: 1.5m Date & time of photograph: 29-Oct-25; 1108 Camera Type: EOS 5DS VFOV: 27.0° HFOV: 39.6°
EXISTING VIEW Date: 05-Nov-25

The image contained on this page is not representative of scale and distance from the actual viewpoint and shows the proposed development in its context only

Viewpoint 5: Photomontage



VIEWPOINT REFERENCE 05 YR 0 10 Distance to proposed development: 21m Camera height: 1.5m Date & time of photograph: 29-Oct-25; 1108 Camera Type: EOS 5DS VFOV: 27.0° HFOV: 39.6°
PROPOSED VIEW Date: 05-Nov-25

The image contained on this page is not representative of scale and distance from the actual viewpoint and shows the proposed development in its context only

Photomontages prepared by VR STUDIOS LIMITED

Viewpoint 6: Base Photo



Photomontages prepared by VR STUDIOS LIMITED

VIEWPOINT REFERENCE 06 YR 0 10 Distance to proposed development: <10m Camera height: 1.5m Date & time of photograph: 29-Oct-25; 1102 Camera Type: EOS 5DS VFOV: 46.4° HFOV: 65.5°
EXISTING VIEW Date: 05-Nov-25

The image contained on this page is not representative of scale and distance from the actual viewpoint and shows the proposed development in its context only

Viewpoint 6: Photomontage



VIEWPOINT REFERENCE 06

YR 0 10

Distance to proposed development: <10m

Camera height: 1.5m

Date & time of photograph: 29-Oct-25; 1102

Camera Type: EOS 5DS

VFOV: 46.4° HFOV: 65.5°

PROPOSED VIEW

Date: 05-Nov-25

The image contained on this page is not representative of scale and distance from the actual viewpoint and shows the proposed development in its context only

Photomontages prepared by VR STUDIOS LIMITED

Viewpoint 7: Base Photo



VIEWPOINT REFERENCE 07

YR 0 10

Distance to proposed development: 3.2km

Camera height: 1.5m

Date & time of photograph: 29-Oct-25; 0947

Camera Type: EOS 5DS

VFOV: 18.2° HFOV: 27.0°

Date: 05-Nov-25

EXISTING VIEW

This image must be viewed at a comfortable arm's length

Photomontages prepared by VR STUDIOS LIMITED

Viewpoint 7: Photomontage



VIEWPOINT REFERENCE 07

YR 0 10

Distance to proposed development: 3.2km

Camera height: 1.5m

Date & time of photograph: 29-Oct-25; 0947

Camera Type: EOS 5DS

VFOV: 18.2° HFOV: 27.0°

Date: 05-Nov-25

PROPOSED VIEW

This image must be viewed at a comfortable arm's length

Photomontages prepared by VR STUDIOS LIMITED

Viewpoint 7: Wireline



Photomontages prepared by VR STUDIOS LIMITED

VIEWPOINT REFERENCE 07 YR 0 10 Distance to proposed development: 3.2km Camera height: 1.5m Date & time of photograph: 29-Oct-25; 0947 Camera Type: EOS 5DS VFOV: 18.2° HFOV: 27.0°
WIRELINE VIEW Date: 05-Nov-25
This image must be viewed at a comfortable arm's length

Viewpoint 8: Base Photo



VIEWPOINT REFERENCE 08

YR 0 10

Distance to proposed development: 1.8km

Camera height: 1.5m

Date & time of photograph: 29-Oct-25; 1007

Camera Type: EOS 5DS

VFOV: 18.2° HFOV: 27.0°

EXISTING VIEW

This image must be viewed at a comfortable arm's length

Photomontages prepared by VR STUDIOS LIMITED

Date: 05-Nov-25

Viewpoint 8: Photomontage



VIEWPOINT REFERENCE 08

YR 0 10

Distance to proposed development: 1.8km

Camera height: 1.5m

Date & time of photograph: 29-Oct-25; 1007

Camera Type: EOS 5DS

VFOV: 18.2° HFOV: 27.0°

Date: 05-Nov-25

PROPOSED VIEW

This image must be viewed at a comfortable arm's length

Photomontages prepared by VR STUDIOS LIMITED

Viewpoint 8: Wireline



VIEWPOINT REFERENCE 08 YR 0 10 Distance to proposed development: 1.8km Camera height: 1.5m Date & time of photograph: 29-Oct-25; 1007 Camera Type: EOS 5DS VFOV: 18.2° HFOV: 27.0°
WIRELINE VIEW
This image must be viewed at a comfortable arm's length Date: 05-Nov-25

Photomontages prepared by VR STUDIOS LIMITED