AIS ENVIRONMENT

Project Description Statement for Proposed Garden Centre at the Disused Quarry Tas-Sejba, Mqabba

As per ERA requirements for PA/5852/09

Report

Project Description Statement

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1 INTRODUCTION

Zahra Recycling Ltd (henceforth referred to as the 'Applicant') commissioned AIS Environment Ltd to prepare a Project Description Statement for the proposed restoration of the disused quarry known as Quarry tas-Sejba, located within the boundary of Mqabba. The Applicant has submitted a Planning Application to the Planning Authority which encompasses a "Proposed garden centre including ancillary cafeteria, tree nurseries and kennel at level +0, visitor parking and groomer at level -1, ancillary stores at level -2 and infilling of quarry.".

This Project Description Statement has been prepared and structured in accordance with S.L.549.46 (ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS, 2017).

1.1 SCHEME LOCATION

The quarry is located in the town of Mqabba, in the southern region of Malta (See Figure 1). It is situated in the Eastern area of the town, relatively close to the end of the airport runway. The Quarry tas-Sejba is predominately surrounded by other disused quarries. The only other land uses in the immediate vicinity are agricultural fields and residential properties.

FIGURE 1: LOCATION OF SITE WITHIN THE MALTESE ISLANDS (SOURCE: GOOGLE EARTH, 2022)

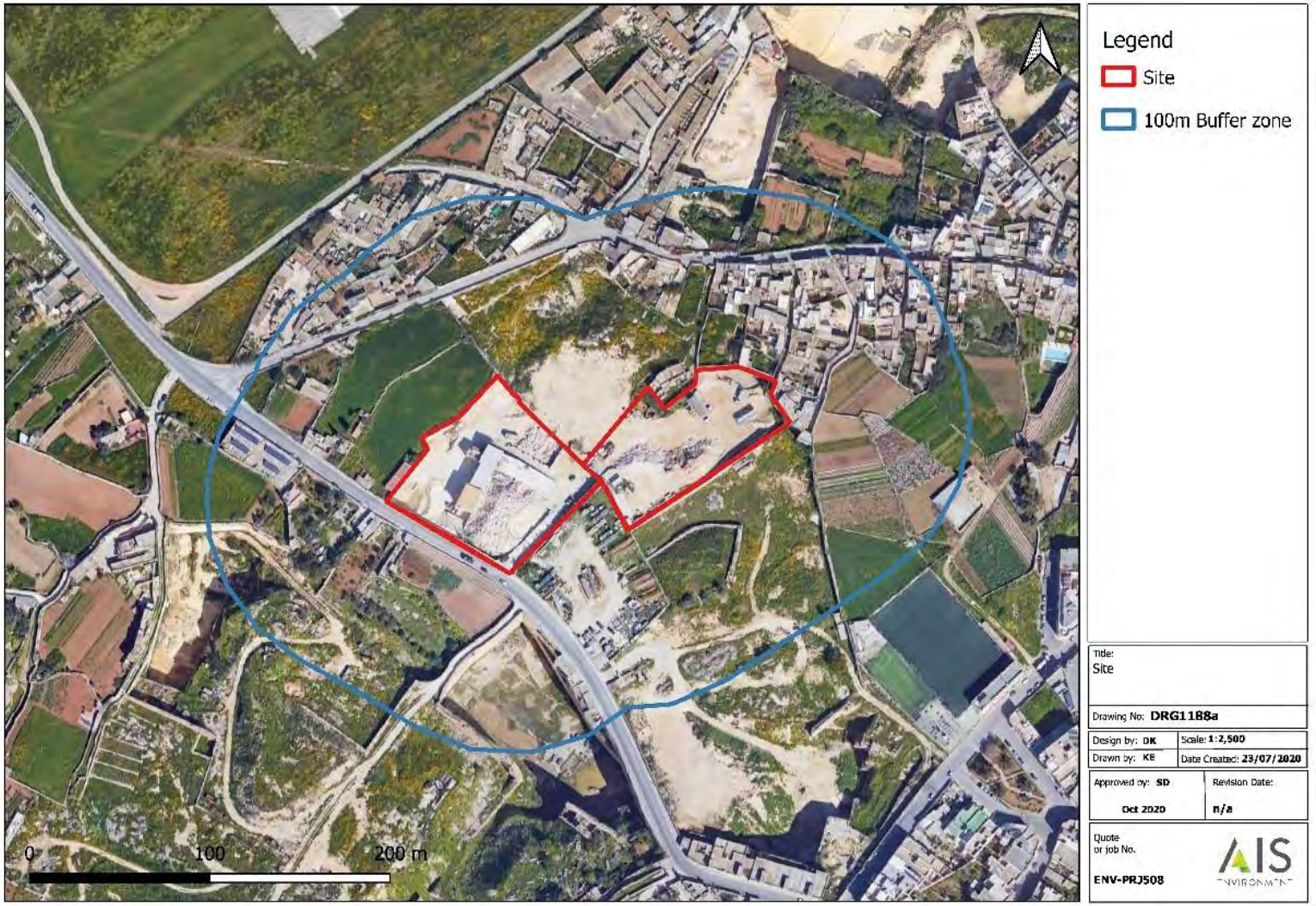

FIGURE 2: BOUNDARIES OF THE QUARRY TAS-SEJBA (RED POLYGON) AND 100M BUFFER INDICATED IN BLUE

1.2 PROJECT OVERVIEW

The tas-Sejba quarry is located in the village of Mqabba, in the South region of Malta in close proximity to the airport runway at coordinates 35°50'42.2"N 14°27'41.3"E. The surrounding land area contains several other disused quarries, agricultural fields and residential property. The development proposed by PA/08500/21 comprises the decommissioning and dismantling of the existing facilities, infilling of the existing quarry and redevelopment of the site into a garden centre, dog boarding and grooming facilities, cafeteria and an outdoor tree nursery.

The proposed developed area comprises a total site footprint of circa 13,342m^2 split between three levels. Ground floor facilities include a greenhouse display area and shop, an ancillary cafeteria, and an outdoor tree nursery, dog park and kennels where dog-boarding services will be provided (See Figure 18). The elevation of the built structures at ground-floor level (namely the cafeteria, kennels and greenhouses) rise to a maximum elevation of 6m from street level (See Figure 17). A total of 116 spaces for visitor and staff parking are available at Level -1, along with a pet-grooming facility, staff room, kitchenette, security room and bathrooms. Level -2 houses 16 stores. Two water reservoirs are present on site, a smaller reservoir within the outdoor ground floor area and a larger reservoir at Level -2.

For ease of reference, the two main areas of the site will be referred to as the Western area and the Eastern area within the report (See Figure 3 for reference).

FIGURE 3: DIVISION OF SITE FOR EASE OF REPORT. EAST: ORANGE AND WEST: PURPLE

1.3 SCHEME JUSTIFICATION

1.3.1 Aims

The proposed project involves the backfilling of the existing quarry with approximately 30,000m² of inert material. The levels around the site will vary to accommodate the proposed structures.

In 2016, Malta recorded the highest percentage rate of inert waste directed for backfilling operations. Around 77% of the total C&D waste treated was backfilled which is considered as a recovery operation. The CONSTRUCTION AND DEMOLITION WASTE STRATEGY FOR MALTA aims to move towards a green economy by managing such waste.

Through this planning application, the quarry will be backfilled and redeveloped into a commercial garden centre.

1.3.2 Relevant Policy

1.3.2.1 Local Plan Policies

The site is situated in the South-Eastern region of Malta, which falls under the consideration of the SOUTH MALTA LOCAL PLAN. The relevant policy maps from the LOCAL PLAN are presented in the Appendix. The policies relevant to the proposed development are summarised below.

- SMIA11

SMIA 11 states that proposed rehabilitation of quarries located within the designated areas shall be viewed favourably. The policy lists a number of acceptable after-uses for quarries following backfilling depending on the sites location, as follows:

- All sites:

Agricultural land

- Sites less than 250m from a designated residential area of the boundary of the airport:

Local scale formal and informal recreation facilities, as long as part of the site is restored to agricultural purposes if feasible. Sports facilities should not exceed 1 floor above street level and ancillary facilities should be located below ground level if possible.

- Sites at least 250m from a designated residential area of the boundary of the airport:

Sports facilities (including major impact sports such as off-roading), Class 12 and Class 17 developments (based on the Classes Order 1994) subject to the relocation of inappropriate or inadequately mitigated Class 17 developments. If feasible, part of the site should be restored for agricultural uses. The roof of all structures must not exceed the existing street level.

- SMCO 08

Policy SMCO 08 (Groundwater Resources Protection and Water Quality) of the SMLP defines the types of developments permitted within the Water Protection Zones

designated for the policy area. In accordance with the policy, developments within Water Protection Zones shall only be permitted if they meet the following criteria:

- Are connected to the public sewer system or sealed cesspool. No septic tanks shall be allowed.
- If the development includes roads, provisions must be made for the collection and storage of run-off water.
- Include dedicated and appropriately sized waste collection areas.
- A sufficient layer of rock is maintained above the ground water table.
- Industrial developments will not be permitted in close proximity to public boreholes, underground gallery systems of springs and pumping dolines which are used to supply drinking water and recharge the natural aquifers.
- Do not dispose of harmful liquids into the sewer system.
- If the development involves the housing of animals, there must be a proper collection system and sufficient storage and containment of manure and animal slurry.
- There is no livestock breeding or rearing in doline areas and quarries.
- If the development is agricultural or farming based, there must be specific storage facilities for inorganic fertilisers.

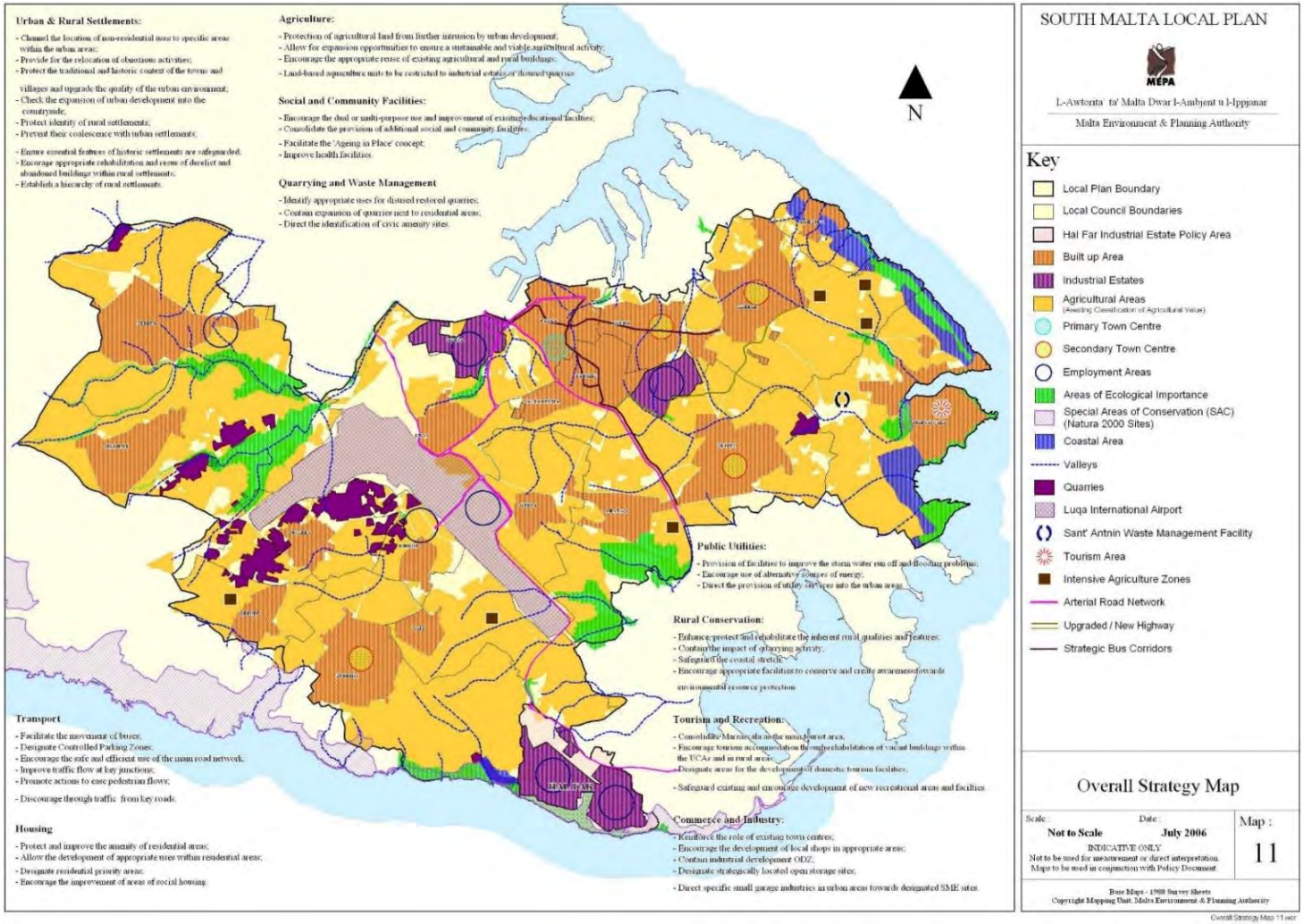

FIGURE 4: STRATEGY MAP FOR THE SOUTH MALTA LOCAL PLAN

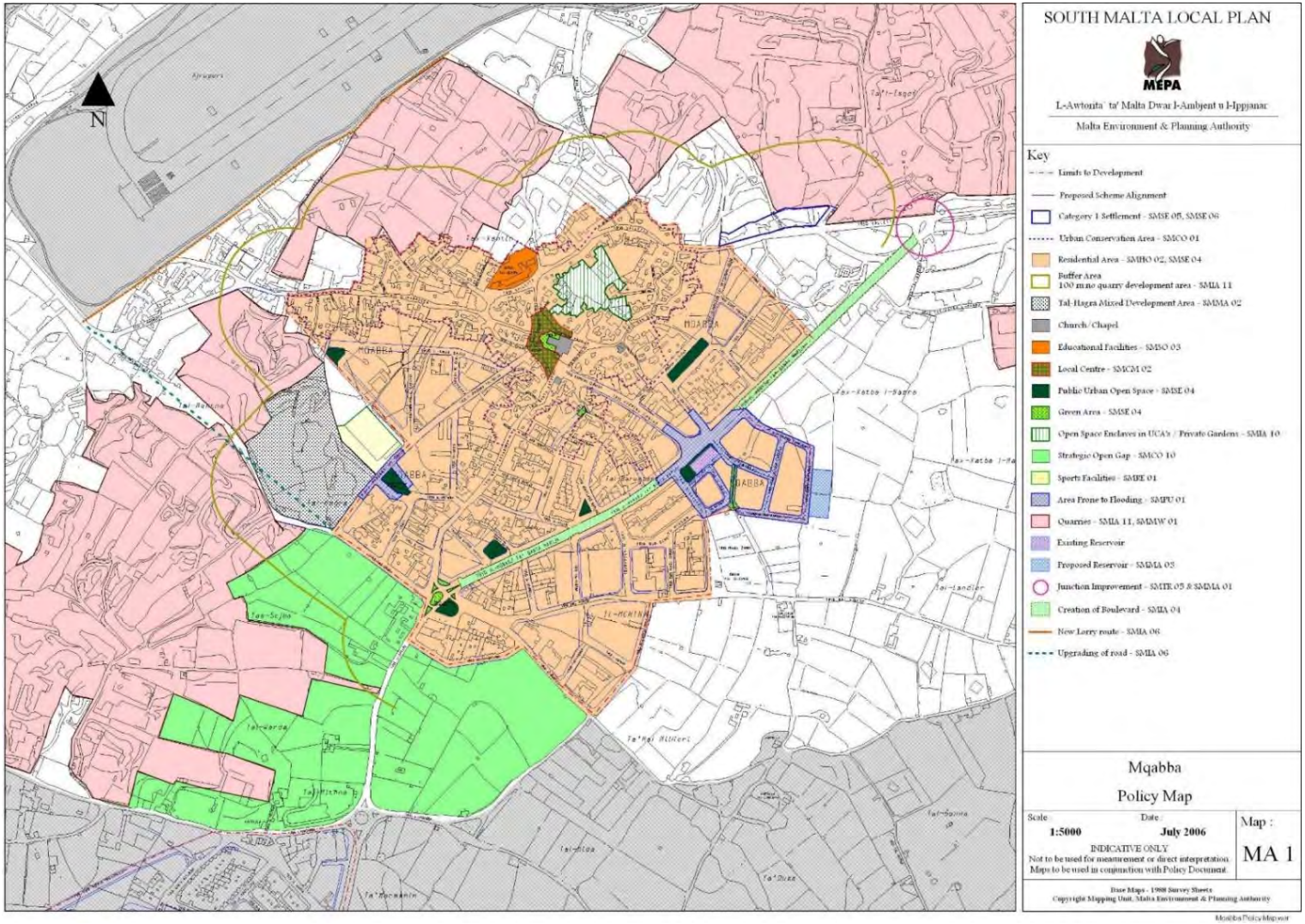

FIGURE 5: MQABBA POLICY MAP

1.3.2.2 Development Control Design Policy, Guidance and Standards 2015 (DC15)

- **Water Reservoirs (P47)**

The DC15 states that all new developments should include a water reservoir which contains rainwater run-off from the surrounding area. Technical Guidance Document F applies.

- **Vehicle Parking Standards (P18)**

The policy requires the following minimum parking standards for restaurants:

- **A minimum of 1 : 1 ratio of parking spaces to resident staff**
- **A minimum of 0.33 : 1 ratio of parking spaces to non-resident staff**
- **A minimum of 5 parking spaces for each 50sq.m of restaurant area**

1.3.2.3 Waste Management (Management of Waste from Extractive Industries and Backfilling) Regulations S.L. 549.50[1]

The policy enacts DIRECTIVE 2006/21/EC of the European Parliament and European Council on the management of waste from extractive industries such as quarrying. The disposal of limestone waste materials emanating from the extraction process is covered within this subsidiary legislation, including measures to avoid or minimise negative effects on the environment. This includes any potentially negative effects on water, air, soil, flora and fauna, the general landscape and human health. The legislation also makes provisions for the backfilling of waste into spent quarries for rehabilitation purposes.

[1] https://legislation.mt/eli/sl/549.50/eng/pdf

2 SCHEME SITE AND SURROUNDING AREA

2.1 LAND USE

2.1.1 Scheme Footprint

The development proposed by PA/08500/21 comprises primarily of a garden centre and outdoor tree nursery. The developed area comprises a total site footprint of circa 13,342m^2 split between three levels. The ground floor footprint amounts to circa 6,000m^2. Ground floor facilities include a greenhouse display area of 2,650m^2 including a class 4 shop, an ancillary cafeteria (circa 80 m^2) and over 3,500m^2 of landscaping which includes a perimeter of native vegetation, outdoor tree nursery and dog kennels (See Figure 18). The elevation of the built structures at ground-floor level (namely the garden centre) rise to a maximum elevation of 6m from street level (See Figure 17). A total of 116 spaces for visitor and staff parking are available at Level -1. This level also houses a pet grooming facility, reception and office area, kitchenette, staff room, security room and bathrooms. Level -2 houses 16 stores amounting to circa 5,500m^2. Two reservoirs are present on site, a smaller reservoir (100m^3) within the outdoor ground floor area and a larger reservoir (360m^3) at Level -2.

2.1.2 Surrounding Area

Land uses within a 100m buffer zone surrounding the site of the proposed development have been mapped in Figure 6. The proposed Scheme is predominately surrounded by quarries, agricultural land, commercial/industrial and residential areas. The site is in close proximity (1 km) to the Malta Police Force Academy, Malta Aviation Park and WSC Pumping Station.

The site lies next to the main road of Triq Tas-Sejba and is accessed through the quarry's bi-directional internal road. Triq tas-Sejba is lined by franka stone walls which surround the quarry area and the nearby land uses.

Various disused quarries are present around the immediate confinements of the site. Most of the disused quarries are being used for storage purposes such as parking of heavy machinery and old cars (Figure 7).

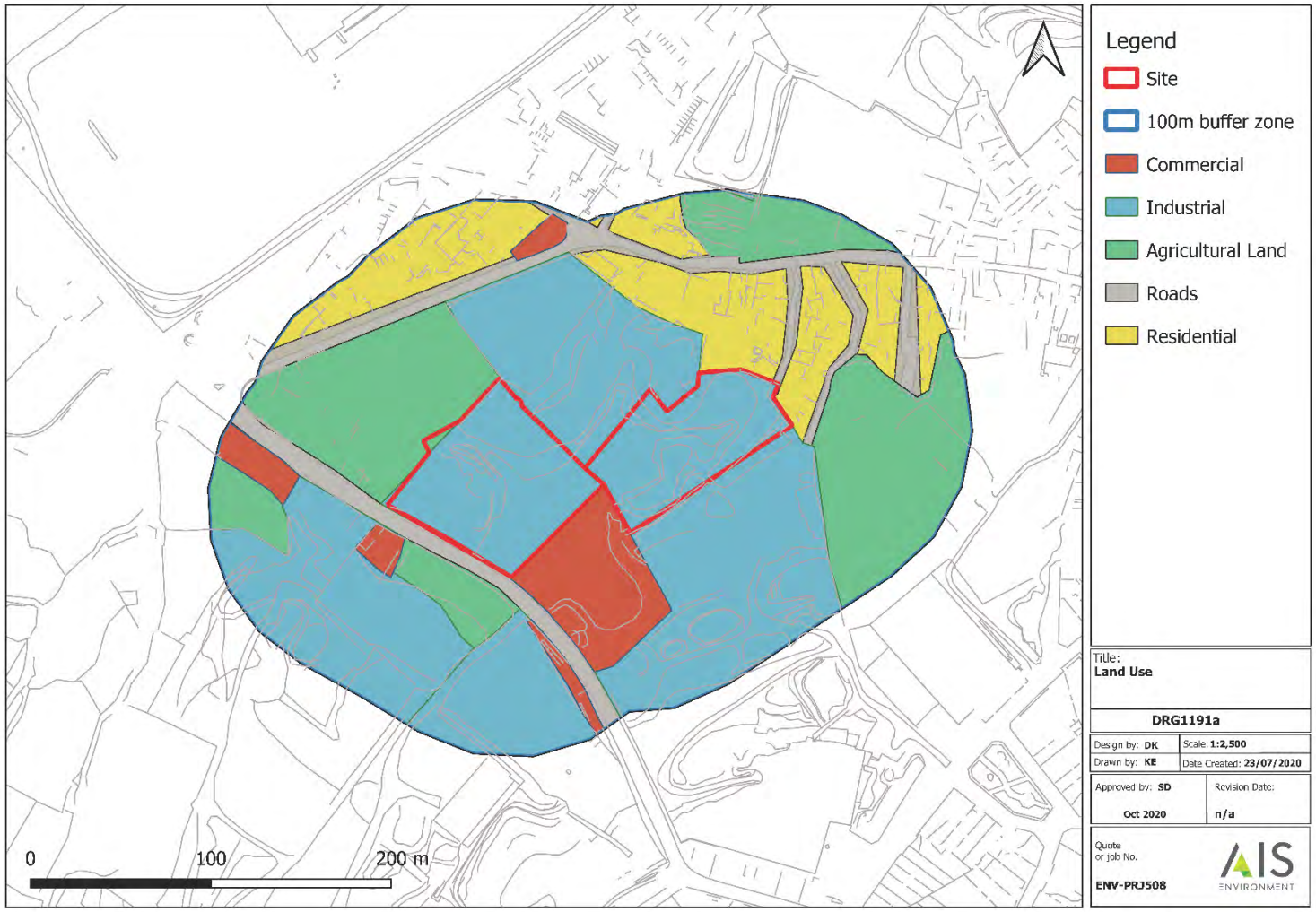

FIGURE 6: LAND USES IN THE AREA SURROUNDING THE PROPOSED SCHEME SITE

FIGURE 7: OLD CARS PARKED IN ABANDONED QUARRY (NOVEMBER 2020)

The development site is surrounded by several unused agricultural fields. Various traditional rubble walls can delineate the parcels of agricultural land which surrounding the scheme site (Figure 8).

FIGURE 8: UNUSED AGRICULTURAL FIELDS (NOVEMBER 2020)

The main commercial activities around the site include mechanical services and garages (Figure 9, Figure 10). A large commercial parking area for heavy vehicles/machinery is also located on the right side of the site's entrance.

FIGURE 9: COMMERCIAL BUILDINGS (NOVEMBER 2020)

FIGURE 10: COMMERCIAL AREA WITH GARAGES (NOVEMBER 2020)

Several residential areas are also present in close proximity to the scheme site. (Figure 11, Figure 12). The residential property in the surrounding area is composed of traditional Maltese two-storied houses, split by a network of alleys between the

houses. The AoI contains a part of the protected Urban Conservation Area, which severely restricts the type and size of residential developments in the area. Generally, these areas are of special architectural or historical interest.

FIGURE 11: RESIDENTIAL PROPERTIES LOCATED RELATIVELY CLOSE TO QUARRY TAS-SEJBA (DECEMBER 2020)

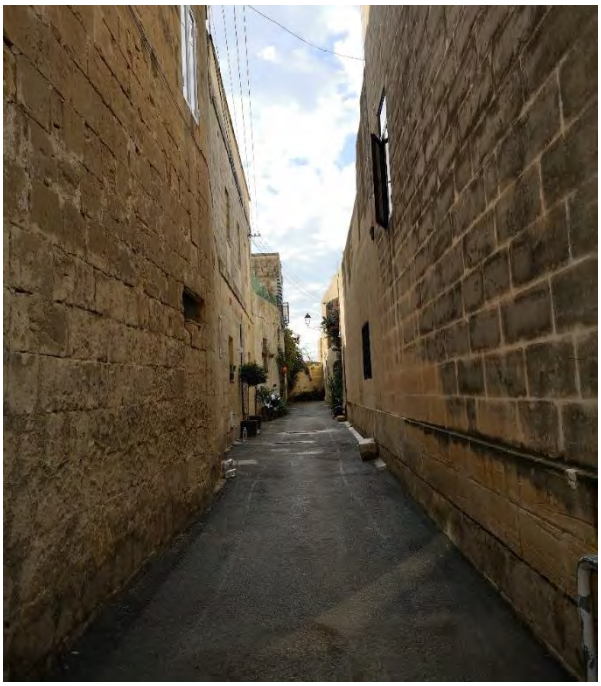

FIGURE 12: ALLEY BETWEEN THE HOUSES IN RESIDENTIAL AREA (NOVEMBER 2020) GEOLOGY AND GEOMORPHOLOGY

2.2 GEOLOGY

The land in the AoI constitutes of Lower Globigerina limestone (Figure 13). Globigerina is a yellow, fine-grained limestone composed of planktonic globigerinid foraminifera, and its three layers are separated by two thin layers of phosphorite beds[2].

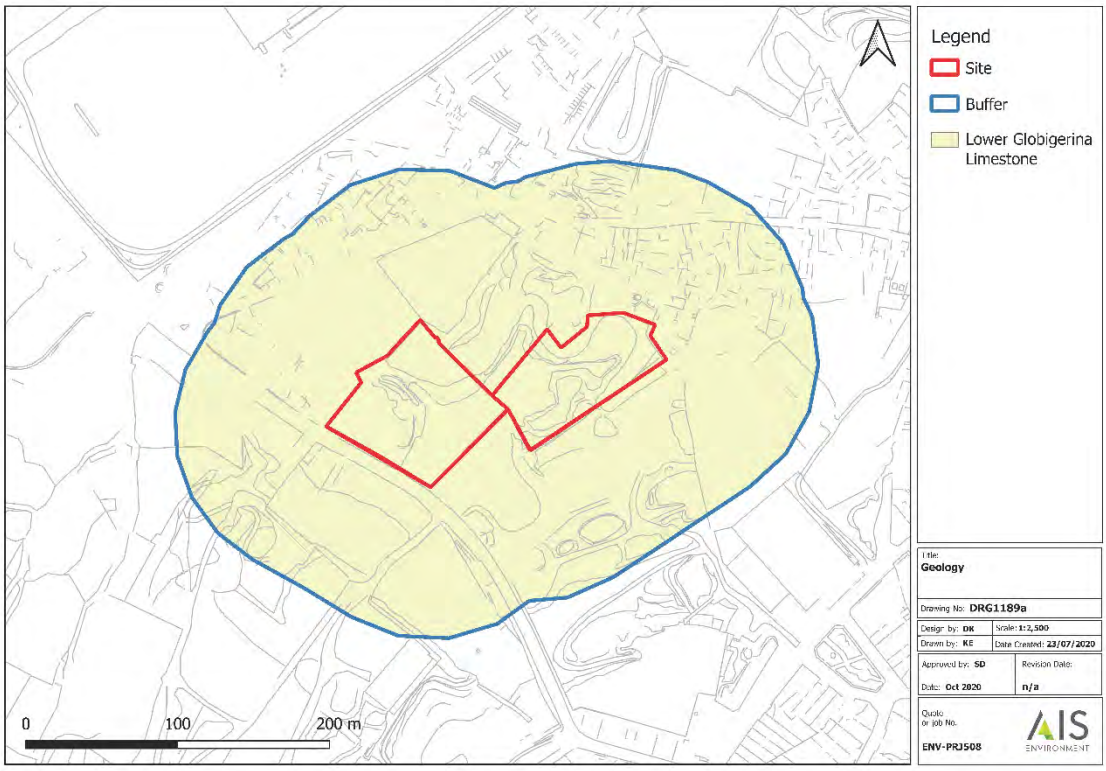

FIGURE 13: GEOLOGICAL MAP OF THE PROPOSED SCHEME SITE AND SURROUNDING AREA

2.3 SOIL

The two types of soil present in the AoI are the tas-Siġra series and tad-Dawl complex. The majority of the study area, and also the Scheme site footprint, is comprised of tad-Dawl complex soils, which are typically dark yellowish red in colour and clay loam texture. Part of area is built-up (See Figure 14).

[2] Continental Shelf Department at the Ministry for Transport and Infrastructure

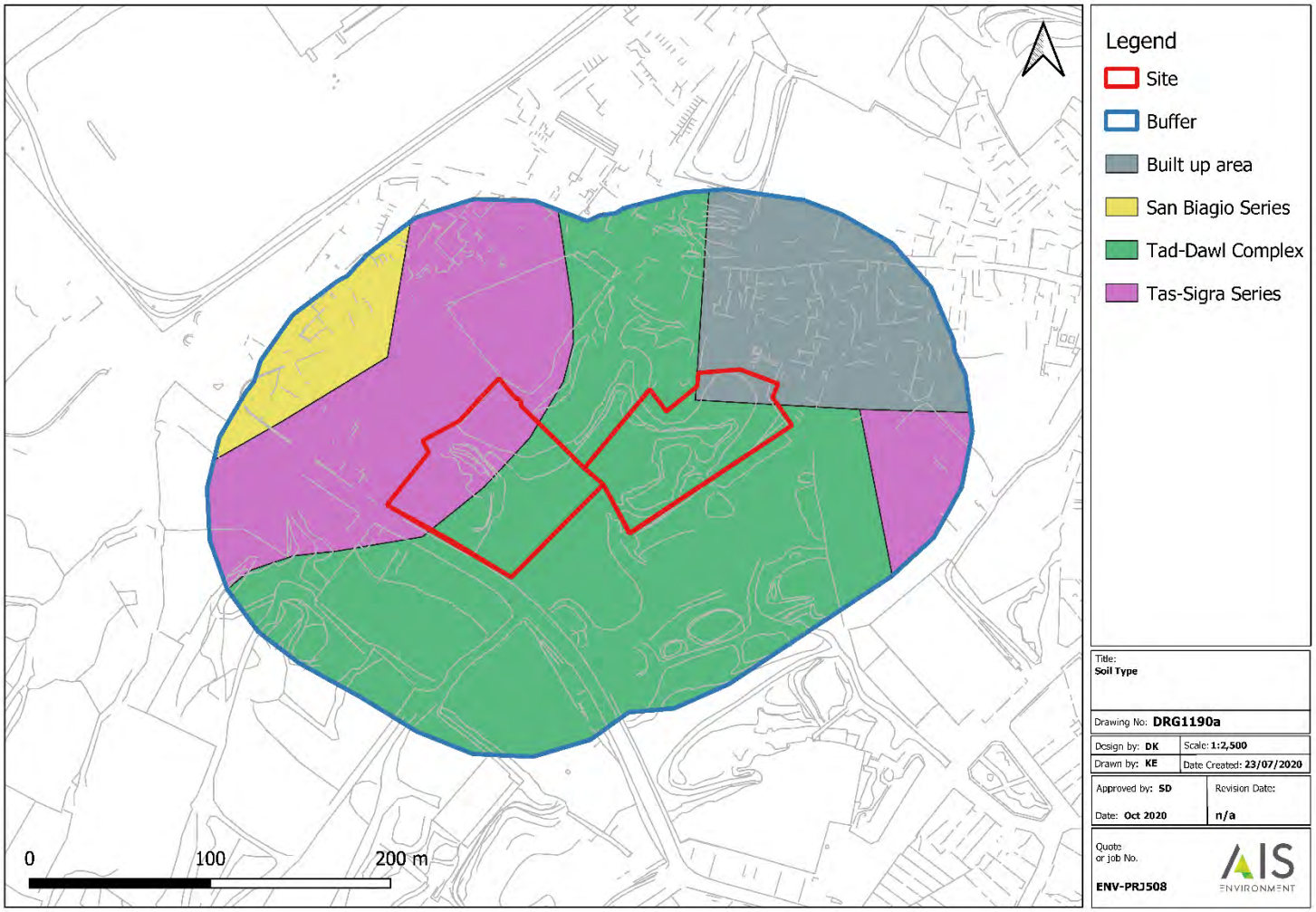

FIGURE 14: SOIL MAP OF THE PROPOSED SCHEME SITE AND SURROUNDING AREA

2.4 HYDROLOGY

The AoI is located on Malta Mean Sea Level ground water body (MT001). The AoI enters the geological structure previously defined as MT011 – the Mqabba – Żurrieq perched groundwater body, which is no longer considered as a body of groundwater according to the Water Catchment Management Plan[3].

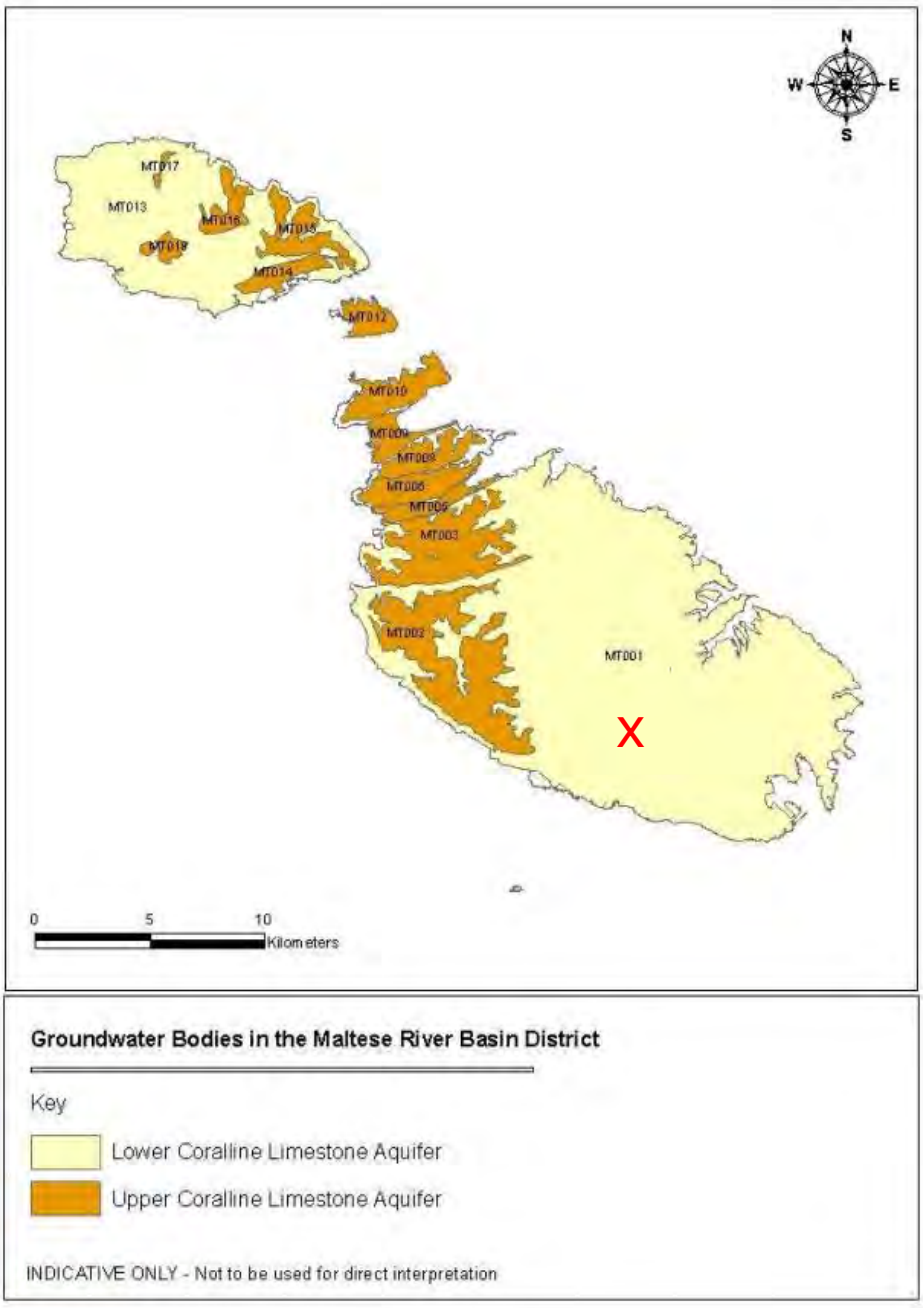

FIGURE 15: PRELIMINARY IDENTIFICATION OF BODIES OF GROUNDWATER WITHIN THE MALTESE WATER CATCHMENT DISTRICT[4] [5]

[3] The Water Catchment Management Plan for the Maltese Islands, 2011

[4] Source: MEPA (2011). The Water Catchment Management Plan for the Maltese Islands

[5] The Scheme location is indicated with a red X

2.5 ECOLOGY

The vegetation within the proposed Scheme site is sparsely distributed, occupying the sides of the roads, the quarry wall boundaries, and the borders of surrounding agricultural land. The plant life observed mainly consists of ruderal, agricultural and invasive species.

The only species recorded on site which is protected by Maltese law is *Capparis orientalis* (Caper bush), which falls under Schedule VIII of FLORA, FAUNA AND NATURAL HABITATS PROTECTION REGULATIONS (S.L. 549.44)

Furthermore, the site was observed to contain the following species:

- *Cupressus sempervirens* (Italian cypress), *Olea europaea* (Olive tree), and *Ceratonia siliqua* (Carob tree), which are protected under Table 2 of the TREES AND WOODLANDS PROTECTION REGULATIONS, 2018 (S.L. 549.123)[6]. These trees are protected only when they are within protected areas, in ODZ, in green areas, in natural or rural/green enclaves in an urban area (development zone), or in urban public open spaces.
- *Arundo donax* (Great Reed), which falls under the Second Schedule of the TREES AND WOODLANDS PROTECTION REGULATIONS, 2018 (S.L. 549.123) and is classified as invasive, alien or environmentally-incompatible species.
- *Opuntia ficus-indica* (Prickly Pear) which is a naturalised alien species and not prohibited as an invasive species due to its long-standing presence locally.
- *Prunus dulcis* (Common Almond), which is protected under Table 2 of the TREES AND WOODLANDS PROTECTION REGULATIONS, 2018 (S.L. 549.123), however this is with the exception of trees of this species grown within agricultural fields.
- Individuals of the *Bougainvillea species*, a popular ornamental bush.
- *Ficus carica* (Fig tree) and *Vitis vinifera* (Common Grape Vine), which are grown frequently in agricultural fields for their summer fruit. The fig tree can be found on occasion growing naturally in the Maltese countryside.

2.6 CULTURAL HERITAGE

The status of the cultural heritage features within the 100m buffer zone was researched on the PA map server website. The desktop study revealed that no protected sites or features are present within the area.

2.7 SERVICES AVAILABLE

2.7.1 Energy and Water

The current waste recycling plant is not connected to national electric, water, surface water and sewer services. In addition, there are no water reservoirs on the site. The water used is purchased from third parties and stored temporarily in a bowser truck.

The proposed development requires a connection to electricity and water services to cater for the commercial establishment and landscaped area. A 3-phase electrical

[6] Link: https://legislation.mt/eli/sl/549.123/eng/pdf

supply will be required. Two reservoirs are proposed to support the plants and trees grown within the garden centre and the vegetation within the landscaped area.

2.7.2 Sewage

The proposed development will be connected to the main sewage system. The connection is planned to be located at the entrance ramp.

2.7.3 Surface Water Run-Off and Storm Water Drainage

The Applicant has incorporated a rainwater harvesting system into the proposed development. The system shall be composed of two separate reservoirs to collect the water from the different areas of the site. A third reservoir will be included to store greywater. Table 1 provides further details on each of the reservoir collection systems.

TABLE 1: PROPOSED RAINWATER HARVESTING SYSTEM

RESERVOIR LOCATION	RESERVOIR CAPACITY (M^3)	COLLECTION AREA
Outdoor Area	100	Water Mains
Level -2	360	Garden Centre Roof
Level -2	78	Greywater

3 THE SCHEME

3.1 SIZE, SCALE AND DESIGN

Before the commencement of the construction works, the current recycling plant will be decommissioned. This will involve the straight-forward dismantling of the current steel structure and removal of machinery off site. Once the site is clear, some of the surface material will be removed until the required level is achieved. This material will be transported off site to be used as backfill material in other construction sites.

The foundations of the new structure will be composed of piles, which shall be drilled into the underlying bedrock. The piles will then be filled with concrete. The lower two levels, which will be situated below the surrounding ground level, will be constructed out of concrete columns and reinforced concrete slabs. The overlying ground level greenhouse will be composed of prefabricated steel and glass.

The material required for backfilling of the Eastern area shall be sourced from multiple construction sites located around Malta belonging both to the Applicant and Third Parties. The material will be sorted, and crushed, if necessary, off site. Therefore, there shall be no material crushing or screening on site. The material shall be dumped directly into the quarry void.

Once the desired level has been reached, a layer of soil shall be placed over the area before the installation of a geo-grid. The proposed model of geo-grid is the *Agtec Geocell*. It is made from High-Density Polyethylene (HDPE) which makes it

particularly durable. Each of the individual cells will be 24.5cm wide and 21cm long. The geo-grid will allow the rain water to naturally percolate into the ground, consequently contributing towards the recharge of the underlying aquifer. Finally, the site perimeter will be landscaped using a variety of native tree species (See the following figures and Section 3.2.4 for more detail on the landscaping scheme).

3.1.1 Garden Centre

The garden centre design will feature a steel frame structure with a lightweight semi-transparent sandwich panel construction. The interior will comprise an open plan design with merchandise displays, a reception desk, and an ancillary office and cafeteria.

3.1.2 Underground Facilities

Level -1 will be dedicated to employee and visitor parking. There are plans also include a pet grooming facility, staff room, bathrooms, security room and reception within this level. Level -2 will be used as a storage facility to support the operations of the garden centre and also houses reservoirs and a pump room which will be used to support the operations of the tree nursery and garden centre. No waste management activities will be carried out within the proposed stores at Level -2.

3.1.3 Outdoor Landscaped area

The outdoor area will be landscaped with native tree species particularly around the border of the site. An open area will be dedicated to an outdoor tree nursery, where trees can be both grown and displayed for sale (circa 3,500m^2). There are plans to incorporate an area for kennels, providing dog boarding services for up to 64 dogs at a time.

3.1.4 Combustion plants

No combustion plants such as generators or boilers are included in the proposed development.

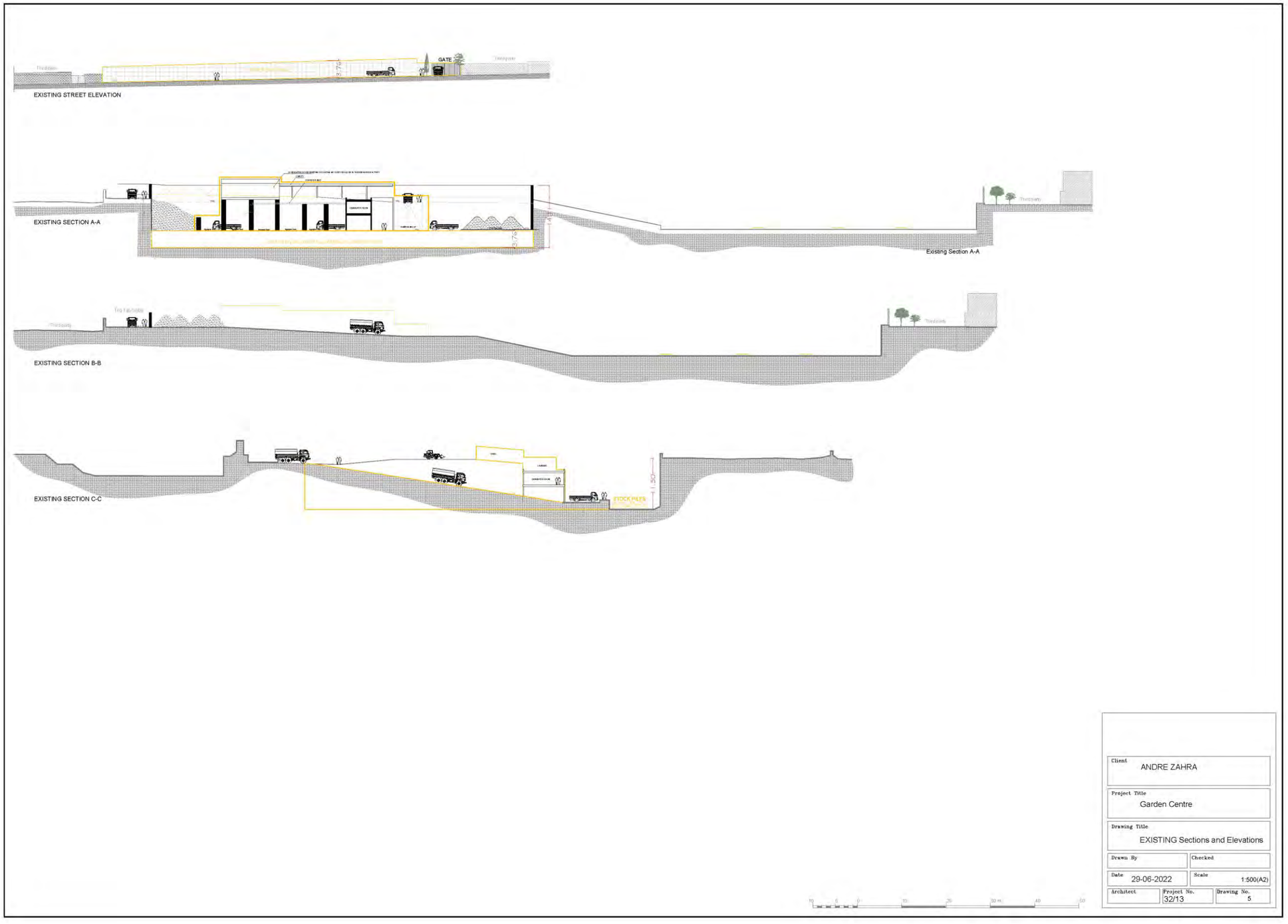

FIGURE 16: EXISTING ELEVATION AND SECTIONS

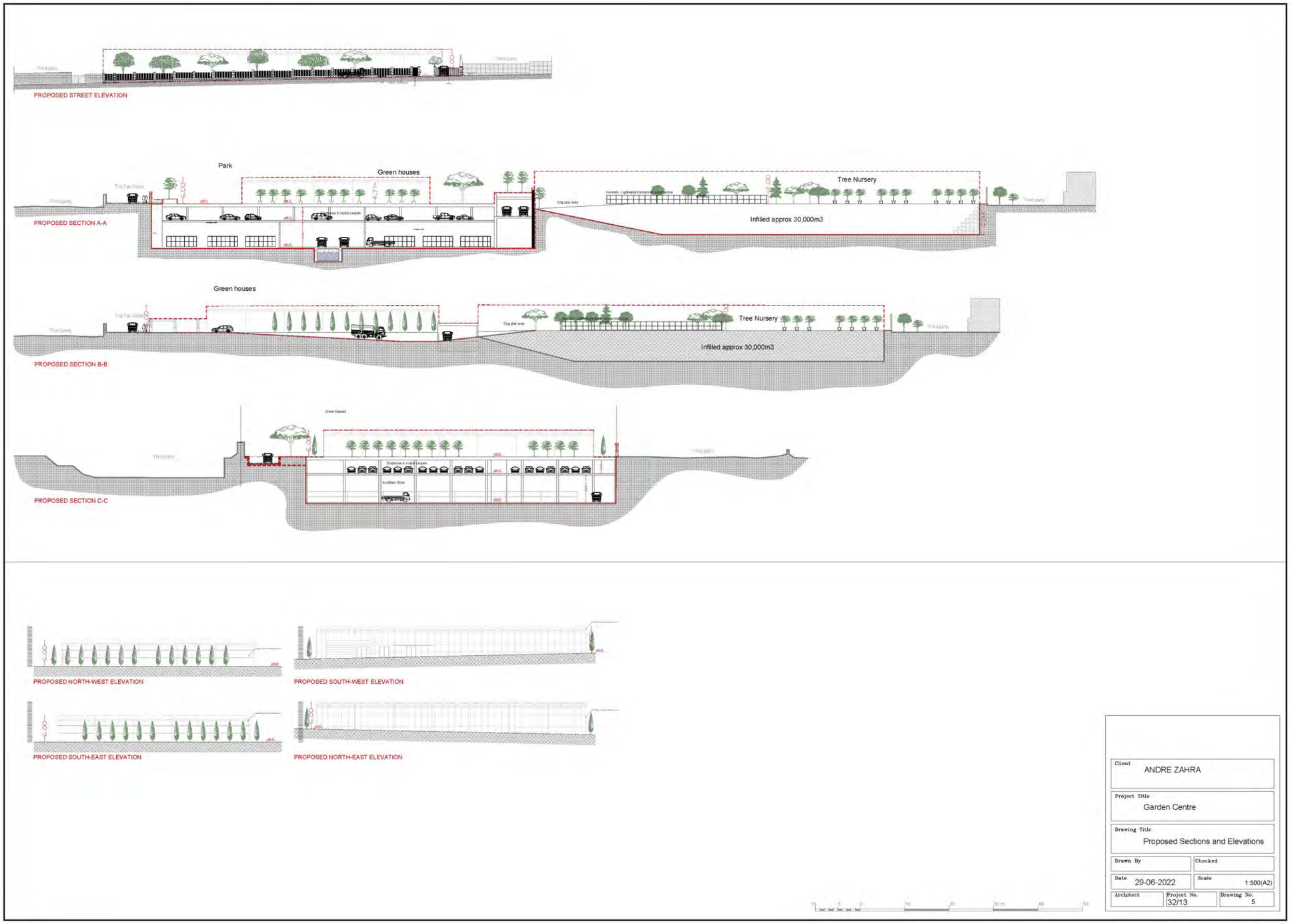

FIGURE 17: PROPOSED ELEVATION AND SECTIONS OF GROUND FLOOR DEVELOPMENT

FIGURE 18: PROPOSED GROUND FLOOR LEVEL

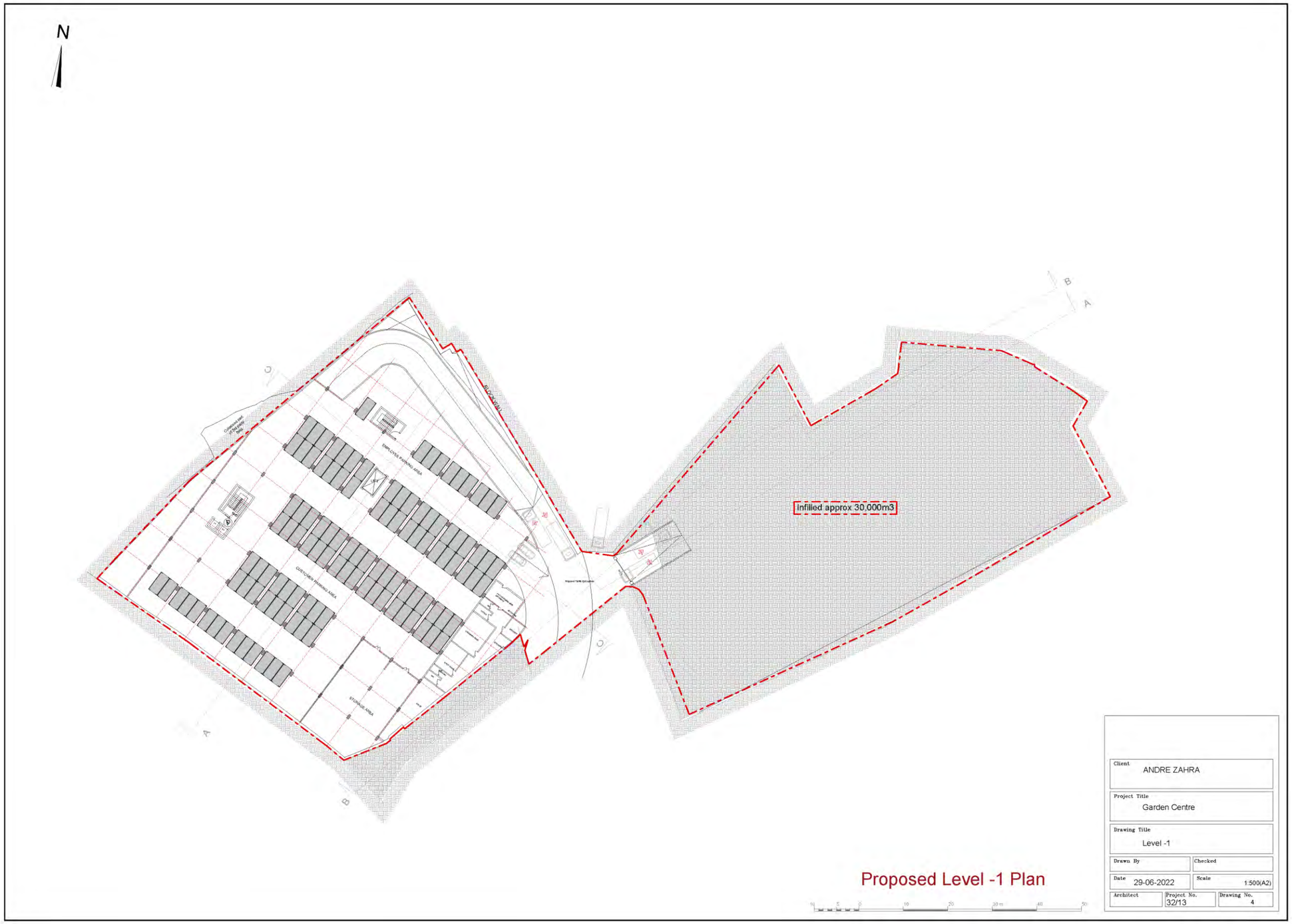

FIGURE 19: PROPOSED PLAN FOR LEVEL -1

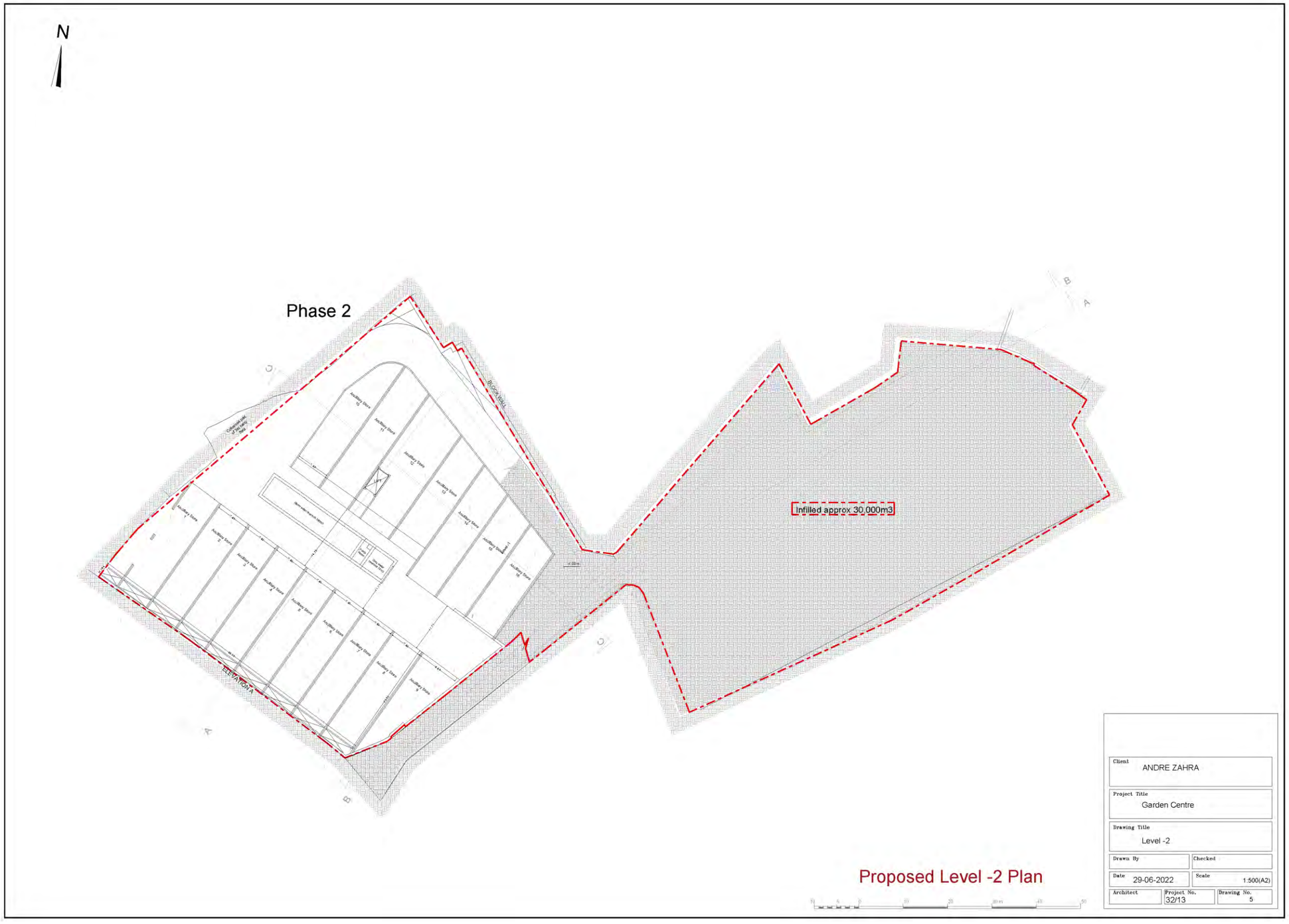

FIGURE 20: PROPOSED PLAN FOR LEVEL -2

3.2 CONSTRUCTION PHASE

3.2.1 Number of Employees

It is expected that between 3 and 5 employees are required for the backfilling operations. This figure will increase to between 12 and 20 employees required during the construction phase. The latter will be tasked with working on the concrete columns and slabs as needed, in teams of three.

3.2.2 Phasing

The works in the Western and Eastern areas shall take place simultaneously. The activities in the Western area will be divided into 5 sequential phases, taking approximately 33 months (2 years and 9 months) to complete. The Eastern area restoration activities are less complex. They shall be divided into only 3 phases over a duration of approximately 11 months. Table 2 outlines the phasing of the proposed works.

TABLE 2: OUTLINE OF THE PROJECT PHASING

QUARRY AREA	ACTIVITY	DURATION
Western Area	Removal of material	8 months
	Removal of machinery	3 months
	Backfilling	2 months
	Construction and piling	18 months
	Landscaping	2 months
Eastern Area	Conversion from open storage into void for backfilling	3 months
	Backfilling	6 months
	Landscaping	2 months

3.2.3 Raw Materials

Table 3 outlines the types and approximate quantities of raw materials which shall be required for the proposed restoration of the quarry.

TABLE 3: MATERIALS REQUIRED FOR THE PROPOSED DEVELOPMENT

MATERIAL	USE	APPROXIMATE QUANTITY
Concrete	Underground levels	9,000 m^3
Steel	Greenhouse	125,000 kg
Inert material[7]	Backfilling	30,000 m^3
Soil	Landscaping	3,900 m^3
Geo-Grid	Ground surfacing	3,200 m^2

3.2.4 Landscaping

The landscaping of the proposed site will involve the planting of 91 trees across the site. Three different indigenous tree species have been selected to help promote local biodiversity. Table 4 outlines the proposed tree species and quantities. The majority of the trees shall be located around the perimeter of the site to help it blend in with the surrounding rural landscape, as illustrated in Figure 18.

TABLE 4: OUTLINE OF THE PROPOSED LANDSCAPING TREE SPECIES AND QUANTITIES

LATIN NAME	COMMON NAME	QUANTITY
Pinus halepensis	Aleppo Pine	28
Cupressus sempervirens	Italian Cypress	16
Olea europea	Olive	44
Tetraclinis articulata	Sandarac Gum Tree	3

3.2.5 Machinery

Currently, the site houses machinery related to the operations of the recycling plant. These include dedicated machinery for stone crushing, and front-loaders to move the

[7] Part of this material will be derived from excavated material produced by the proposed works (See PA/08500/21 – Doc 30f)

product from the plant to a stockpiling area. These machines will be removed from the site in the initial phases of development.

The construction will involve the use of dump trucks, excavators, cranes and read-mix trucks. The number of vehicles required for each phase is yet to be quantified.

FIGURE 21: MATERIAL CRUSHING OPERATIONS (AUGUST 2020)

FIGURE 22: MATERIAL STOCKPILES (AUGUST 2020)

3.2.6 Energy

During the construction phase, energy will be derived through fuel for the machinery engines and connection to a 3-phase electrical supply available already on site when necessary.

3.2.7 Waste

The waste generated from the construction works will be minimal. Waste generation is expected to will be limited to the packaging and offcuts of the raw materials used during the construction of the garden centre.

Plastic waste will be the primary waste stream for the landscaped area, including pots and packaging for the landscaped area and offcuts of drip irrigation and other garden items.

Excrement generated by the dog boarding facilities will be collected within an underground cesspit and disposed of periodically as per S.L 439.15 – MINIMUM STANDARDS FOR OPERATING A BOARDING ESTABLISHMENT FOR CATS AND DOGS REGULATIONS[8] and applicable waste legislation.

The Contractor shall ensure that all waste is separated according to waste stream and stored in clearly labelled, closed receptacles within the designated waste management areas. Once the receptacles are full, an appropriately licensed waste carrier shall transport the waste to an ERA licensed facility.

3.2.8 Access

Access into the site is provided through the main gate located along Tas-Sejba Road as shown in Figure 23. The proposed activities do not require any modifications to the existing access configurations to the scheme site.

[8] Link: https://legislation.mt/eli/sl/439.15/eng/pdf

FIGURE 23: MAP SHOWING ACCESS TO THE SITE

3.2.9 Parking Arrangements

The parking provisions for heavy machinery and trucks are located within the site. The applicant proposed to cover part of the site area with a 150-250mm thick layer of concrete to be used as a storage area for heavy vehicles and equipment.

3.3 OPERATIONAL PHASE

3.3.1 Number of Employees

The client estimates that circa 5 employees will be required at any one time for the operational phase of the development.

3.3.2 Raw Materials

The operations phase requires the use of the following estimated amounts of raw materials (See Table 5).

TABLE 5: RAW MATERIALS REQUIRED DURING OPERATIONS PHASE

MATERIAL	MAXIMUM QUALITY STORED ON SITE	STORAGE ARRANGEMENTS
Soil	300m^3	Level -2
Bulbs and Seeds	500m^3	In shop and Level -2
Garden furniture and tools	2000m^3	In shop and Level -2
Pet products	500m^3	In shop and Level -2

MATERIAL	MAXIMUM QUALITY STORED ON SITE	STORAGE ARRANGEMENTS
Merchandise	6,000m³	Level -2

3.3.3 Machinery

The operations phase requires the use of the following machinery listed in Table 6

TABLE 6: TYPE AND QUANTITIES IF MACHINERY REQUIRED DURING THE OPERATIONAL PHASE

EQUIPMENT	AMOUNT
Trucks	2
Vans	4
Small Crane	1
Cherry Picker	2
Forklift	2

3.3.4 Energy

During operations, a mains 3-phase connection supplying 40KvA (60 Amps) will be in use.

3.3.5 Waste

The client notes that the proposed development will generate minimal amounts of waste. Wastes derived from dead vegetation will be retained in a composter on site and fully re-used.

Additional wastes will be generated from the cafeteria, office and groomer. The Contractor shall ensure that all waste is separated according to waste stream and stored in clearly labelled, closed receptacles within the designated waste management areas. Once the receptacles are full, an appropriately licensed waste carrier shall transport the waste to an ERA licensed facility.

3.3.6 Access

The existing access on the Southern side of the site (adjacent to Triq Tas-Sejba) will be retained.

3.3.7 Parking Arrangements

A total of 116 spaces will be available for visitor and staff parking on Level -1.

4 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

A preliminary indication of the environmental impacts that are likely to be associated with the Scheme are described in this section, and may serve as an initial scoping assessment in the context of the ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS OF 2017 (S.L. 549.46).

The potential impacts of the Scheme and their respective mitigation measures are listed in Table 7. The impact of the proposed Scheme has been assessed in relation to the restoration of the quarry back to its original condition as described in the SOUTH MALTA LOCAL PLAN, which recommends restoration to agricultural land.

TABLE 7: POTENTIAL IMPACTS AND THEIR MITIGATION MEASURES

FEATURES POTENTIALLY IMPACTED	DESCRIPTION OF POTENTIAL IMPACT	MITIGATION MEASURES
Land Use	**Moderate Adverse** The SOUTH MALTA LOCAL PLAN proposes that the site is returned to its original land use prior to the quarrying activities, which would be agricultural land. The current proposal contradicts the direction provided by the Plan and proposes a commercial activity instead. The impact is considered moderate due to the surrounding land-use being predominantly other quarries and commercial activities, interspersed with agricultural land. The proposed development centres around horticulture, which is closely related to agricultural activities, however it does not provide the same benefit to the local community i.e., contributing to food security, tradition and safeguarding of semi-natural landscapes.	N/A

FEATURES POTENTIALLY IMPACTED	DESCRIPTION OF POTENTIAL IMPACT	MITIGATION MEASURES
Visual Amenity	**Minor Beneficial** The site is currently a disused quarry. Stone recycling processes carried out after quarrying was discontinued generated considerable noise and dust, albeit in more limited amounts. The proposed scheme will result in an improvement to the visual amenity of the site when compared to quarrying-related land uses. However, when compared to the restoration of the site to agricultural land as proposed in the South Malta Local Plan, the proposed scheme leads to adverse visual impacts caused by the boundary wall and the greenhouse development itself. This impact is already mitigated partially through the inclusion of a landscaping scheme with tall trees around the perimeter of the site.	N/A The current mitigation measures as proposed in the scheme will adequately minimise the adverse visual impact of the development and present a significant improvement to the current visual amenity of the site.
	Minor Adverse During the construction phase, the construction machinery will temporarily reduce the landscape and visual amenity of the area.	The machinery should be parked within the site boundary when not in use.
Ecological	**Moderate Adverse** Some of the surrounding protected Caper Bushes may have to be uprooted to accommodate the Scheme. Even if they do not need to be uprooted, they will be at an increased risk of accidental	N/A

FEATURES POTENTIALLY IMPACTED	DESCRIPTION OF POTENTIAL IMPACT	MITIGATION MEASURES
	harm during the construction phase. The severity of the adverse impact depends on how many (if any) protected plants will be directly affected. The proposal includes 91 native trees, which will be planted around the perimeter of the site and provide adequate compensation for the ecological impact of the construction in this regard.	
	Negligible The dust generated during the construction phase may settle on the leaves of surrounding vegetation, interfering with their ability to photosynthesize. The impact is considered to be negligible due to the limited construction activities which will not cause a significant deterioration of the surrounding air quality.	The ENVIRONMENTAL MANAGEMENT CONSTRUCTION SITE REGULATIONS of 2007 (S.L. 435.79) should be enforced and implemented throughout the construction phase to keep the level of dust generation to a minimum. Specific practices include the covering of all stockpiles of loose materials and damping the internal road surface if they become dry and dusty. Any affected vegetation should be gently sprayed down with water regularly to avoid the prolonged build-up of dust.
	Beneficial The site of the scheme contains small pockets of invasive and non-native species (*Arundo Donax* and *Opuntia ficus-indica*). If these are removed during the construction phase of the project, this will result in a beneficial impact on the	Following the removal of invasive plant species, regular monitoring should be carried out to identify any re-emergences of invasive species and prompt their immediate removal.

FEATURES POTENTIALLY IMPACTED	DESCRIPTION OF POTENTIAL IMPACT	MITIGATION MEASURES
	surrounding area as it will halt the spread of the species.	
	Minor Adverse The greenhouses may house species which are not native to the Maltese islands. Such species may have invasive tendencies when they enter the natural environment.	Such species may only be housed within the enclosed area of the greenhouses to avoid any accidental dispersal into the surrounding natural environment. Informative posters can be set up within the plant store warning prospective plant owners of the ramifications of invasive species of plants when placed in the natural environment.
	Minor Adverse Pest control within the nursery and the landscaped area will require some use of pesticides and other pest control methods. Pesticides can spread into the surrounding fields when used in windy conditions, or leach into the mean sea level aquifer if used preceding rainfall. Excessive use of fertilisers can also result in the leaching of nitrates into the aquifer.	Where possible, natural alternatives to chemical pesticides will be used by the operator. Examples include spray, eucalyptus oil, and natural pest predators. Only Plant Protection Products certified by the MALTA COMPETITION AND CONSUMER AFFAIRS AUTHORITY are to be used in the event that pesticides are required. Pesticides will be used only indoors or when wind is lower than a light breeze outdoors. Care will be taken to avoid the application of pesticides and fertilisers in the vicinity of rainfall events, particularly in the outdoor areas which are very porous. Fertilisers can only be applied outdoors between May and

FEATURES POTENTIALLY IMPACTED	DESCRIPTION OF POTENTIAL IMPACT	MITIGATION MEASURES
		October, as per the NITRATES DIRECTIVE regulations.
Agricultural	**Minor Adverse (Construction)** **Beneficial (Operations)** The impacts of the construction phase are envisaged to only cause a minor deterioration to the current levels of dust deposition within the surrounding agricultural land. The operational period will result in an improvement to the current site condition, as the operations are not envisaged to cause any dust generation and therefore, dust-related impacts on the surrounding agricultural land will cease.	The Applicant needs to implement several mitigation measures to limit the dust emissions from the site, including the regular wetting of stockpiles and use of sprinkling systems and appropriate site hoarding during the construction phase. The site will carry out twice daily cleaning and spraying down of the site to further mitigate the spread of dust. The operational phase should not require any dust-mitigation measures.
Geology Geomorphology Palaeontology	**No Impact** The proposed Scheme is not expected to result in changes in the sites or surrounding areas geology, geomorphology or palaeontology.	N/A
Hydrology Hydrogeology	**Minor Adverse** The sealing of the site floor area with an impermeable layer of concrete will affect the recharge of the underlying aquifer. The concrete will prevent the rainwater from being able to percolate though the rock into the underlying aquifer. If the site were to be restored to its original	The Applicant has already incorporated rain water harvesting systems to ensure as much rainwater as possible can be harvested and reused.

FEATURES POTENTIALLY IMPACTED	DESCRIPTION OF POTENTIAL IMPACT	MITIGATION MEASURES
	condition, this impact would not arise. However, since the area of the site is very small in relation to the size of the MMSL aquifer, the severity of the impact is classified as minor.	
	Minor Adverse The construction phase will involve the handling/storage of oil, fuel and chemicals on site. This puts the underlying aquifer at risk from pollution. If a leak or spill was to occur and left untreated, the harmful liquid could percolate down the rock and into the groundwater body. If the site was restored to a natural area, this impact is less likely to develop. Since the Applicant will lay an impermeable concrete floor across the whole area of the site, the likelihood of such an event occurring during the operational phase is minimal. Therefore, the adverse impact can be considered as minor.	In addition to the installation of an impermeable concrete floor, the Applicant should ensure there are emergency spill kits on site at all times. This will enable any accidental spills or leaks to be cleaned immediately.
Air Quality	**Minor Adverse** It is expected that the construction phase of the proposal will result in a temporary increase in dust production on site. The impact is only considered to be minor considering the site is currently being used for material crushing activities, which inevitably results in	The ENVIRONMENTAL MANAGEMENT CONSTRUCTION SITE REGULATIONS of 2007 (S.L. 435.79) should be enforced and implemented throughout the construction phase to minimise the dispersal of dust into the surrounding environment. Mitigation measures include covering of stockpiles by a heavy-duty sheet when not in use, covering of loose material

FEATURES POTENTIALLY IMPACTED	DESCRIPTION OF POTENTIAL IMPACT	MITIGATION MEASURES
	large quantities of dust emissions.	during its transportation, application of water or pre-soaking to limit any generation of dust, daily sweeping or vacuuming of public areas within 10m from the site boundary, maintaining stockpile heights below that of the site boundary, minimising drop heights, wheel washings prior to any vehicular movement off site and dust extraction and recovery systems equipped in machinery.
Noise Levels	**Minor Adverse / Beneficial** The construction phase will cause an increase in the noise generated on site due to the increase in construction vehicle traffic to and from the site, and the construction activities themselves. In the long term, the proposed operations will generate very low levels of noise, an improvement to the levels caused by quarrying or stone recycling activities. However, the noise levels of a popular commercial site would be expected to be significantly higher than those of a low-intensity agricultural enterprise.	The ENVIRONMENTAL MANAGEMENT CONSTRUCTION SITE REGULATIONS of 2007 (S.L. 435.79) should be implemented to minimise the disturbance to locals during the construction phase, in line with S.L. 435.79. Specific measures include restricting working hours to daylight hours, switching off machinery when not in use and dust extraction and recovery systems equipped in machinery.
	Moderate Adverse The site will witness an increase in traffic flow both during the construction period and further during operations.	The ENVIRONMENTAL MANAGEMENT CONSTRUCTION SITE REGULATIONS of 2007 (S.L. 435.79) will be respected during the construction phase to limit the level, timing and

FEATURES POTENTIALLY IMPACTED	DESCRIPTION OF POTENTIAL IMPACT	MITIGATION MEASURES
	An increase in vehicle flow will impact the surrounding noise receptors through an increase in noise caused by wheel friction and braking. The site will attract a significant amount of people per day and thus foot traffic and the cafeteria operations would add to the noise levels of the site. Additionally, some noise will be generated by the proposed kennels.	frequency of the noise produced to levels within legal limits. Soundproofing of the indoor facilities (cafeteria, greenhouse, kennels) may be considered if the noise levels of the operations are predicted to be significantly higher than ambient noise levels recorded within the surrounding agricultural areas.
Light	**Minor Adverse** Works carried out during the construction phase will be limited to within daylight house and thus no impact on existing light levels and duration will be caused by the proposed scheme. During operations, some light impacts are expected around sunset and sunrise, when artificial lighting will be used. For security reasons, parts of the site will likely remain illuminated throughout the night. When compared to agricultural land, the scheme will contribute to an increased duration and intensity of light in the area.	The Scheme is not expected to become a significant source of light pollution. The bulk of working hours will fall within daylight hours, with few exceptions which will be limited by installing sensors and timers particularly for outdoor lighting. All outdoor lighting will be oriented towards the ground and contained by shades. Where possible, yellow light will be used, particularly outdoors.
Waste Management	**Negligible** The estimated quantities of waste during the construction phase are not expected to be significant.	The ENVIRONMENTAL MANAGEMENT CONSTRUCTION SITE REGULATIONS of 2007 (S.L. 435.79) should be implemented to ensure that waste is stored and managed on site in an

FEATURES POTENTIALLY IMPACTED	DESCRIPTION OF POTENTIAL IMPACT	MITIGATION MEASURES
	Within the operational phase, waste will be generated from multiple streams and will require careful sorting and disposal.	appropriate manner before being transported to a registered waste disposal facility. Where possible any waste material should be re-used on site to limit the volumes of waste that needs to be disposed of.
Social Impacts	**Moderate Adverse** During the construction phase of the Scheme, the use of heavy machinery will generate noise and dust which will cause a nuisance to residents and farmers in the surrounding area. During the operational phase, an increased traffic flow to the area will also cause an inconvenience as it will cause an increased in commuting times in the area. The operations will also increase the levels of emissions and noise around the site. No impact is envisaged on the parking amenity of the area, as the proposal provides an adequate supply of parking spaces. When compared to restoration of the site to agricultural land as proposed in the LOCAL PLANS, the current proposal provides limited benefits to the local community. Should all the quarries in the area be restored to	The ENVIRONMENTAL MANAGEMENT CONSTRUCTION SITE REGULATIONS OF 2007 (S.L. 435.79) should be implemented to minimise the disturbance to local businesses. A traffic plan for the area should be developed to minimize the traffic impacts on the roads surrounding the site. The Applicant should also regularly consult the Local Council to identify and rectify any causes of concern. There are currently no mitigation strategies available to compensate for the potential loss of XXm2 of agricultural land which will be caused by the proposed scheme.

FEATURES POTENTIALLY IMPACTED	DESCRIPTION OF POTENTIAL IMPACT	MITIGATION MEASURES
	agricultural land as proposed, the locals would benefit from a new recreational area, improved visual amenity, increased residential housing prices, local produce and rural job creation. The proposed development will provide a recreational benefit only to paid customers and thus does not benefit the local community at large.	