CONSTRUCTION OF TWO STOREY CAR PARK FOR 506 SMALL TO LARGE PRIVATE VEHICLES AND BIKE PARK

PA 2262/20

TA'QALI

PROJECT DESCRIPTION STATEMENT

Joseph Borg Grech

November 2020

CONSTRUCTION OF TWO STOREY CAR PARK FOR 506 SMALL TO LARGE PRIVATE VEHICLES AND BIKE PARK AT TA'QALI

PA 2262/20

PROJECT DESCRIPTION STATEMENT

This Project Description Statement (PDS) is being submitted with application PA 2262/20 as this proposal falls under Schedule 1 Category II of the EIA Regulations 2017.

1. PROJECT DESCRIPTION

A. PHYSICAL CHARACTERISTICS

This development consists of the removal and relocation of existing Nissen Huts, excavation works and the construction of a two storey car park and bike park at the uppermost level.

The development is designed so that the lowest level of the car park is one storey lower than the lowest level of the road. The ground floor is approximately level with this lowest road level and the bike park, at the uppermost level, will be accessible from the other higher extreme end of the road.

The building structure is composed of a reinforced concrete frame with beams and columns at regular intervals and roofed over with prestressed concrete slabs. Walls are to be constructed of hollow concrete blocks of various thicknesses, some of which will have reinforced concrete infill in their holes.

The project has a footprint of approximately 10,000 square metres and is located in a curved corner site: a lower side street which has an appreciable gradient and a longer main road which

has a flatter gradient. There is a difference in level of 4.64 metres from the extreme end of the short road and the highest part of the longer road.

The Ground floor parking area is designed to be approximately level with the road level at the main entrance whilst the floor level of the basement floor is located 3.35 metres lower than the main entrance road level.

The bike park track layout is designed to be safe, easy to use by all age groups and designed according to international standards. Suitable open spaces surrounding the track will be designated for spectators. It is anticipated that the bike park would be privately operated. Initial works included in this development permit application will not include the finishing and services of the ancillary rooms.

B. DESCRIPTION OF THE LOCATION OF THE PROJECT

The project is located in an area which was previously part of Ta' Qali Airfield.

Ta' Qali originally had an unpaved airstrip before the 1939. The original airfield was built on a dried lake bed in the interior of the island on a featureless plain situated between Rabat and Valletta. Before the war it was used by civil aircraft but its runway surface became unusable in heavy rain and so it was improved by the RAF.

RAF Ta' Qali was developed at a time when Malta was under intense aerial bombardment and Malta's Air Command needed to have alternative diversion airstrips on Malta, as the RAF's main operating bases were being bombed. Airfield improvements started in 1940 and for the next three years, the RAF base was heavily developed.

After the airfield was decommissioned, various areas were designated other uses such as a national park, Petting farm, Ta'Qali National Stadium, the MFCC-The Malta Fairs Centre, Ta'Qali Basketball pavilion, Ta'Qali Crafts Village, the Animal Hospital and the Malta Model Aircraft Flying Association premises.

This particular area was utilized as part of a factory which manufactured concrete products. Today the site is disused.

Fig 1 Aerial Photo

Fig 2 Site Photo

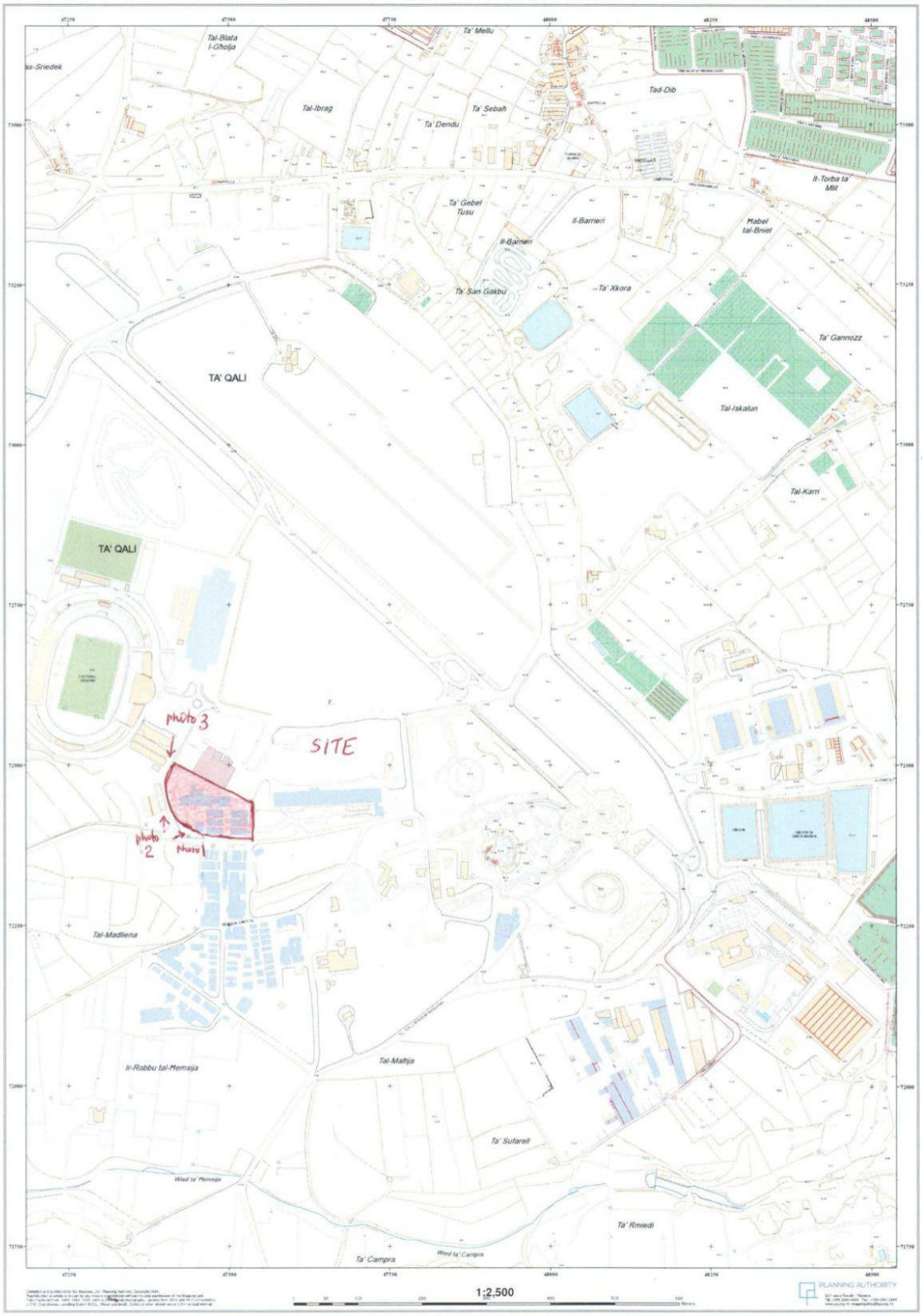

Fig 3 Site Plan

Fig 4 . Location of project- marked yellow

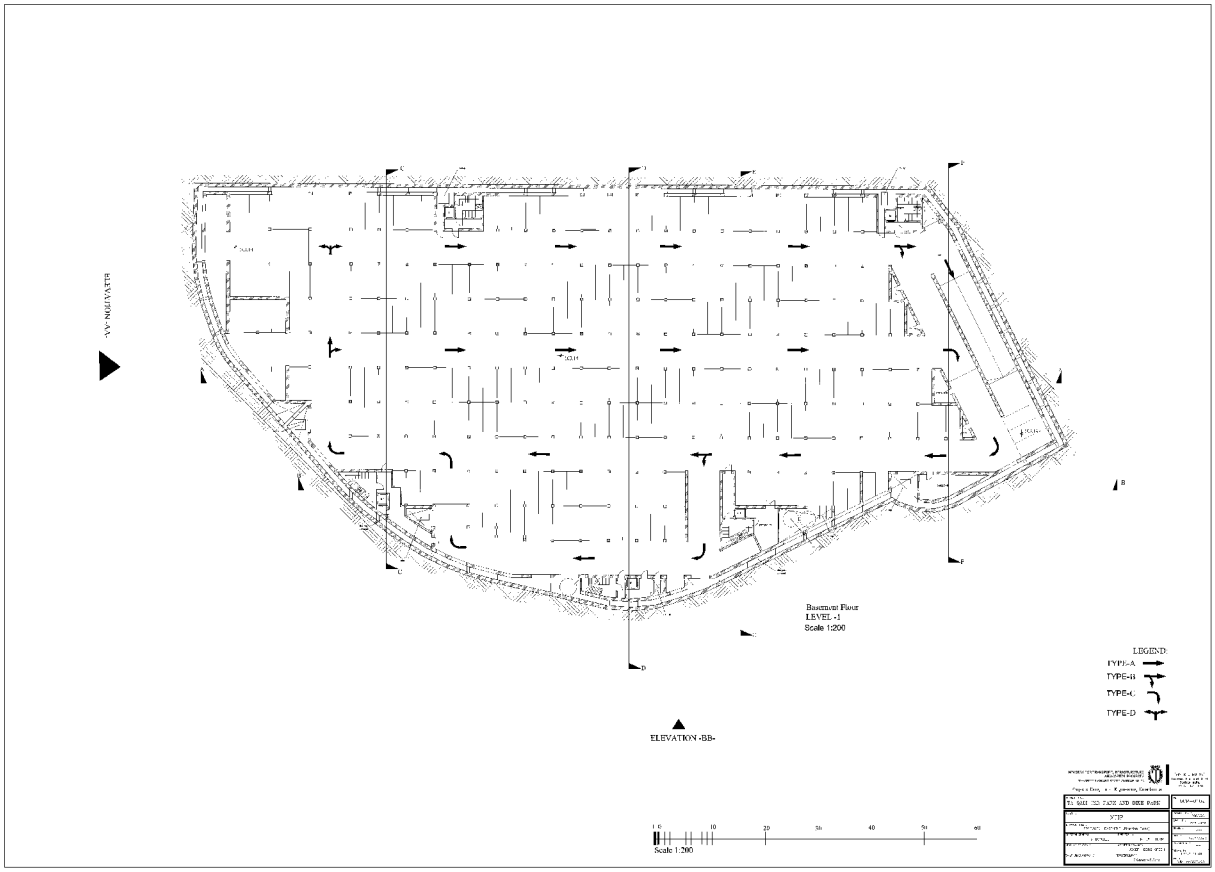

Fig. 5 Proposed Basement Plan

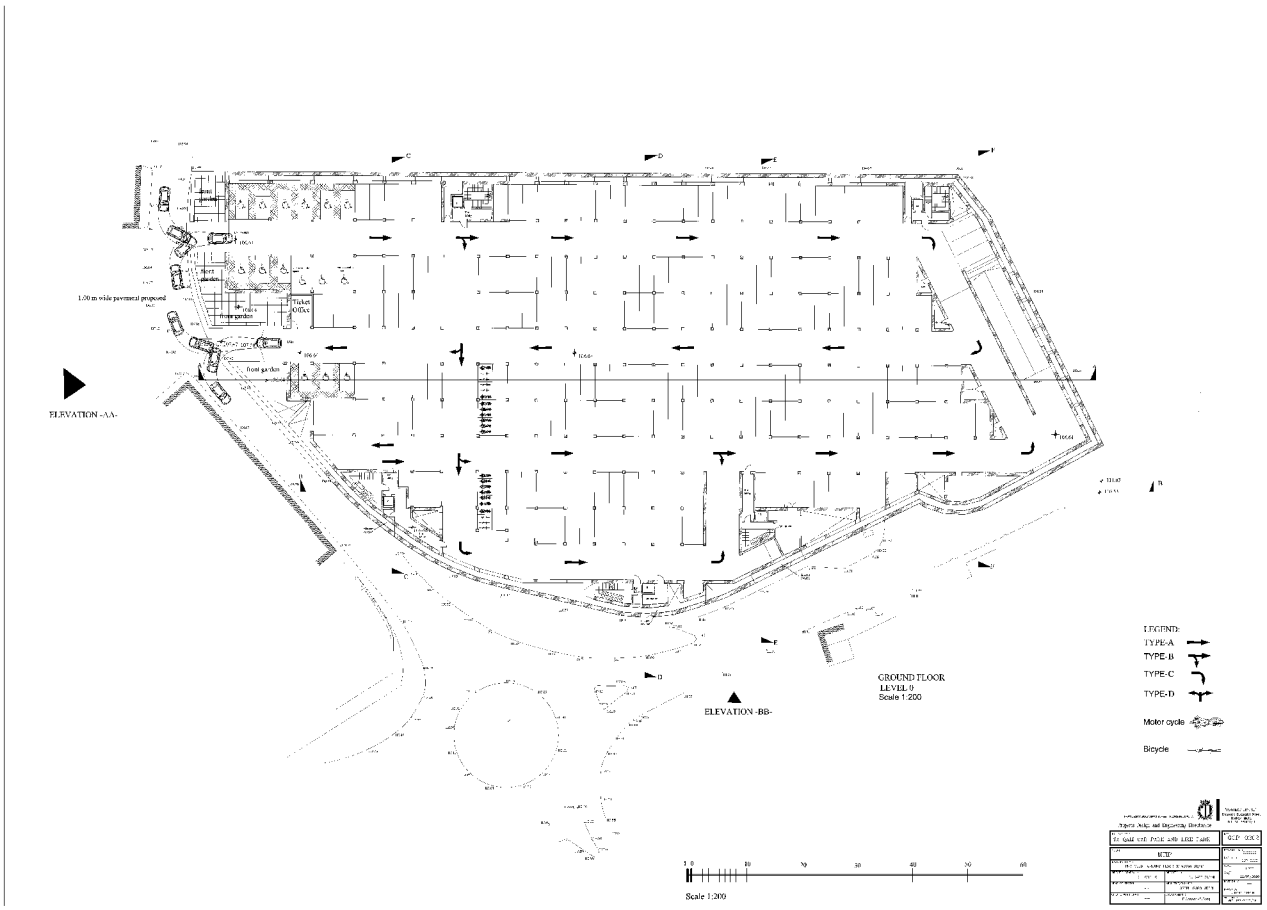

Fig 6. Proposed Ground Floor plan

Fig 7. Proposed Roof Plan

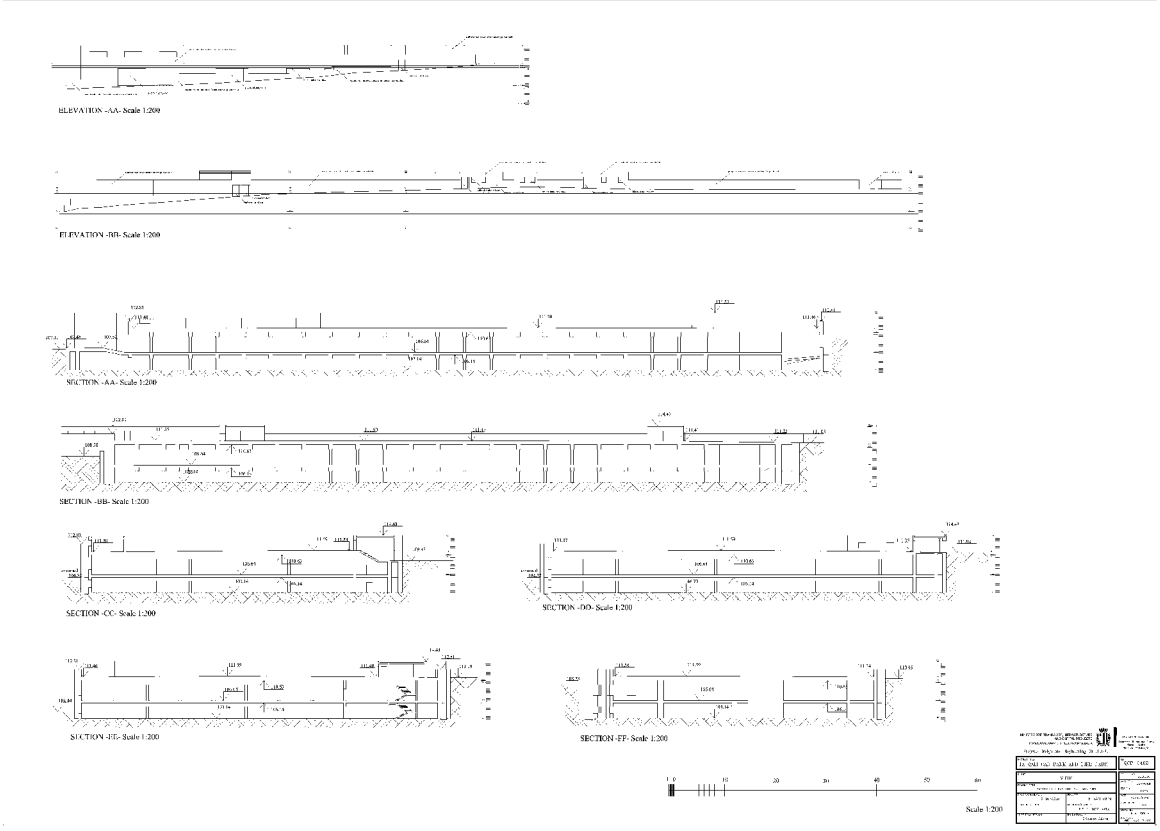

Fig 8 Proposed Elevations and Sections

C. DESCRIPTION OF THE ENVISAGED OPERATIONS AND PROCESS FLOW

This development forms part of the national Ta' Qali project which will effectively almost double the area of the Ta`Qali National Park, with an additional 200,000 square metres of land turned into open spaces for social interaction. 52,000 square metres of land will be rehabilitated to create the new Malta National Park and it will include pockets of land that are currently inaccessible. The present parking areas, which in total cover another 150,000 square metres of land, will be improved. The national park is practically being doubled to 450,000 square metres and will include an extension of the dog park and the creation of a camping site.

This particular site, which used to be part of a dilapidated concrete factory, is an important part of the national Ta'Qali Project. The aims of this development are the following:

1. To provide suitable parking facilities for private vehicles to persons visiting the Bike Park, National Stadium, Basketball Pavilion , Aviation Museum and Concert Area.

2. To channel site parking and provide a means to organise general parking arrangements in the area.

3. To provide a professional bike park for bicycle enthusiasts.

4. To foster and encourage the use of bicycles as a means of green transport and to provide an area where bicycle clubs can conglomerate and thus increase social interaction

5. To aid the country's economic well-being social mobility and quality of life, along with the provision of extra open spaces dedicated to particular uses.

Other Relevant Technical Information:

1. Gross floor area as defined by EIA regulations 19841 sq.metres

2. Description of land uses of environmental sensitivity close to site Vide fig. 9

3. Quantities of excavation waste generated : Limestone 88,400 cu.m. 10, 000 organic soil

4. Duration of constreuction project : 18 to 24 months

5. Projected increase in traffic flows AADT: 142 car traffic flows

D. ANCILLARY REQUIREMENTS INCLUDING ACCESS AND PARKING ARRANGEMENTS AND INFRASTRUCTURAL SERVICES

The project envisages the utilisation of a large area which will be utilised as parking and a bike park. The parking spaces are designed to be used not only by private cars but also by vans, large cars, bicycles, motorcycles and by various vehicles used by persons with disabilities.

An important element is the reutilisation of the runoff water from the large roof. This water will be partly channelled to reservoirs located in the nearby concert area or will be diverted to the proposed storm water system of the area.

To limit the use of artificial ventilation and lighting, a surrounding space around the circumference of the building will be constructed around the building separating the car park from the road and the adjacent sites. This will create natural lighting and ventilation which will supplement the artificial.

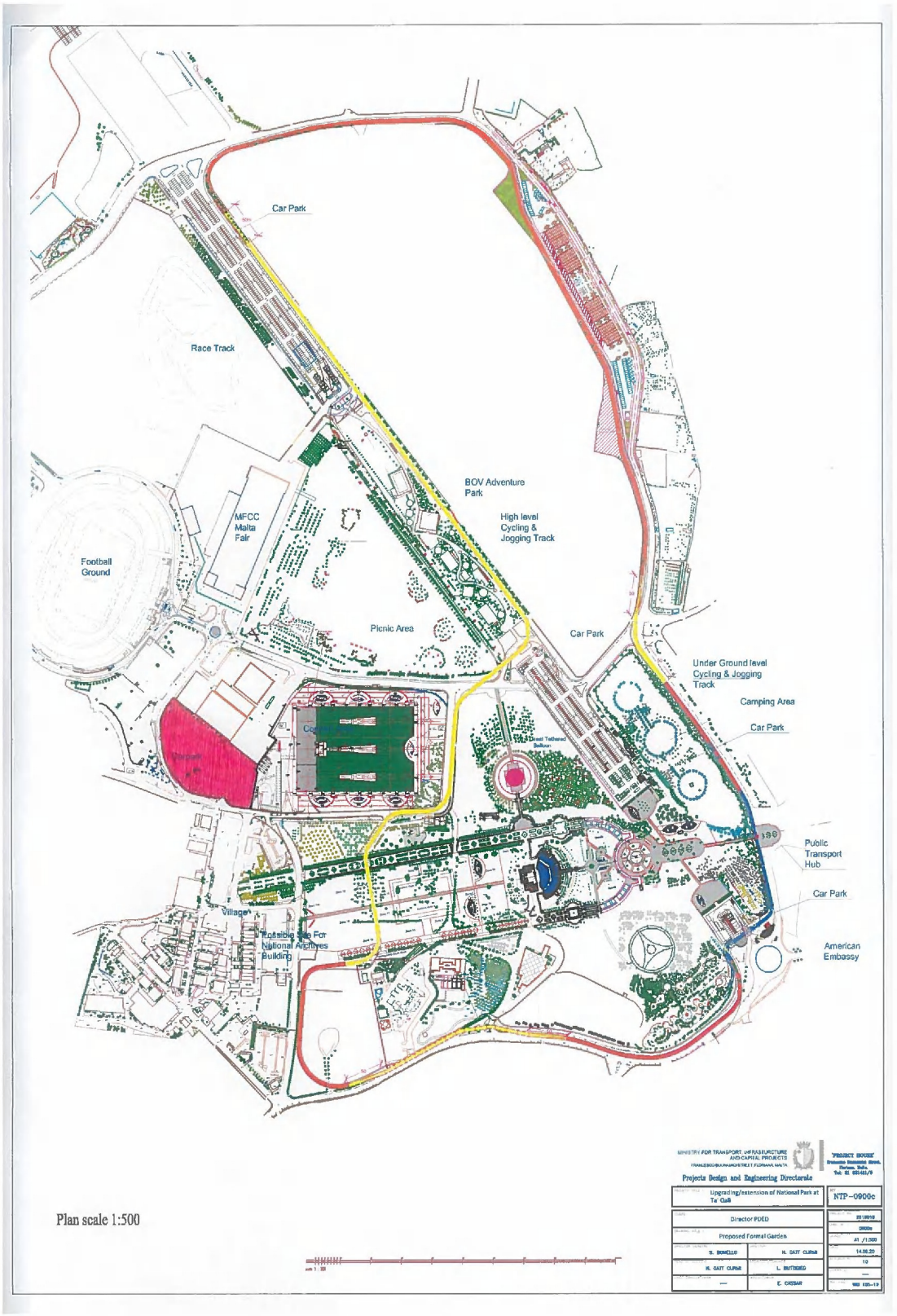

Fig 9 – Land/uses as proposed at close proximity to site

2. DESCRIPTION OF THE ASPECTS OF THE ENVIRONMENT LIKELY TO BE AFFECTED BY THE PROJECT

NOISE

Two main pollution issues arise with the construction of the carpark and bike park: Air and noise pollution. Excessive noise is linked to health conditions such as cardiovascular disease , sleep disturbance, cognitive impairment and annoyance.

Sounds above 85 db will cause hearing loss and motorcycles emit sounds of approx. 95db and heavy traffic 85db. Normally carparks have a noise approximately of 85db as the hard surfaces have negative effects but the bike-park on the other hand presents a lesser noise problem. Prolonged exposure to excessive and loud noise is an occupational hazard to those who work in underground carparks such as cleaners and parking attendants. Aside from its imminent risk of hearing loss, noise is known to have adverse effects on mental and physiological health, causing lack of focus, disorientation, hypertension elevating stress levels, increasing heartbeat frequencies and palpitations.

In this case, as there are no nearby residences and users of the carpark use it for a limited time, the effects of noise generated by vehicles is relatively not severe and there are some industrial workshops nearby which contribute to higher noise contribution themselves. The carpark and bike park are situated in an open area which is not conductive to reverberations and noise amplification. Moreover, the bike park and carpark are situated in an area whose uses generate varying degree of noise levels: The National Stadium with a relatively high number of spectators and on the other hand a nature park, an area of low noise levels. The adjacent industrial warehouses also have a high noise generation.

Although the main criteria for the design and layout of the car park is maximization of car parking space and efficiency of car movements, aspects in the design will help to minimise the effects of noise. As part of the carpark is effectively at basement level, any effects to the outside are minimal. The vastness of the spaces would also dampen noise and a narrow

surrounding open space located at the perimeter will help to any noise and reverberation. Acoustic lining and foam will be applied in ducting to reduce noise levels.

AIR QUALITY

Carbon monoxide and nitrogen dioxide are the most relevant air pollutants in car parks . Petrol vehicles are the main source of carbon monoxide in car parks and diesel engine vehicles are the main source of nitrogen dioxide. In most cases, the nitrogen dioxide concentration in a car park is within the guideline limit as long as the carbon monoxide guideline is satisfied. For car parks used by a high proportion of goods and other diesel vehicles, nitrogen dioxide concentration becomes a more important consideration.

Carbon monoxide blocks the absorption of oxygen by the blood and this can lead to dizziness, unconsciousness, or death depending on the concentration. Nitrogen dioxide affects the lungs and can cause breathing difficulties, prompts asthma attacks and causes long term damage to the lungs. To provide adequate protection of the public health, the air quality inside car parks should be kept within the limits. The maximum concentration of Carbon Monoxide (CO) is to be 115,000 Micrograms per cu. metre or 100 parts per million . The maximum concentration of Nitrogen Dioxide (NO2) is to be 1,800 Micrograms per cu. metre or 1 part per million

To achieve the required air quality , both mechanical ventilation and natural ventilation will be used and natural ventilation will occur due to the design employed. There will be continuous and uniform mechanical ventilation of air inside both floors especially when the car park is in use. Even, when not in use, mechanical ventilation will still be employed in some hours.

The ventilation systems will be designed to ensure that the car park air quality guidelines are met under all circumstances. The ventilation provided will be able to provide sufficient dilution of the CO and NO2 emitted from vehicles during peak hours as well as under the worst foreseeable operating conditions, such as queuing of vehicles within the car park. The supply and exhaust openings for the ventilation system will be distributed to ensure even dilution and removal of air pollutants from all parts of the car park; and to eliminate the possibility of any obstruction to the airflow due to debris. Particular attention will be paid to ensure the fresh air intakes and exhaust outlets will be free from blockage, short circuiting and interaction with

other systems. Sufficient standby units will be provided to meet the air quality guidelines during maintenance periods or in the event of the break down of the normal units.

Service rooms are to obtain light and ventilation from shafts and fresh air will be supplied without contamination of the vitiated air of the car park or the ventilation exhaust. Exhaust air will be discharged to the atmosphere in such a manner and at such a location as not to cause a nuisance to the bike park or of neighbouring buildings, or to the public.

The design and layout of the car park will help minimize the emissions from vehicles. A peripheral open space around the perimeter of the building has been introduced and this will facilitate natural ventilation. The use of ramps has been minimized and these will have a very gently gradient. Entrance and exit routes are easy to find and the traffic flow layout is simple and easy, facilitating less unnecessary vehicular movements.

With careful management, queuing inside the car park will be minimised and to ensure good air quality, the operators of the car park will be encouraged to continuously monitor the levels of CO in a car park.

LAND USE

The car park at Ta Qali is being proposed in order to cater for vehicular parking for the land uses in the locality and to determine the number of car parking for each land use, it is required to know the parking generation for all land uses. It is thus imperative to provide adequate but not excessively extra parking to the existing requirements: There has to be a relation between demand of car parking and land use is available. More parking demand and less available car parking on street, would lead to street congestion and cars seeking for parking will occupy the street for additional time. On other hand, creating abnormal excess of parking, would create a building whose parking potential would never be realised and would be uneconomical were it to be operated privately.

The bike park is proposed to be located on top of this car park and were it to be located elsewhere, this would occupy extra land which would otherwise have been used for other uses. It is also worthwhile to note that it is also advantageous for the bike park to be located at Ta'Qali as it would complement the other sports uses.

As land in this location, and indeed in the whole of Malta, is at a premium, allocation of specific uses will have to be done wisely. In this case creating more than one floor of parking would make better use of land than creating an open parking area or leaving the site vacant.

The primary aim of this development is to maximize the use of available land by concentrating vehicular parking in one area, feeing other zones from providing individual parking facilities. The absence of adequate car park facilities would reduce the capacity of the access roads and effect traffic flow, which may cause accidents and air pollution. Given the local frame of mind regarding car parks, this development would be viewed positively by the general public and more specifically by people frequeningt Ta'Qali.

The concept that the more space provided for cars, the greater becomes the need for the use of cars, and hence for still more space for them does not apply in this case, as there will not be a change in demand for parking space irrespective of whether a parking area is provided or not. Moreover as a bike park is being proposed, it would be advisable to provide for parking for its users.

LIGHT EMISSIONS

Most of the old vehicular light-emitters are not environmentally friendly due to their high energy consumption and the process usually involves liberating highly toxic chemicals like arsenic and cyanides.

As lighting technology is developing, efficient and environmentally friendly vehicle lighting is being installed in some high tech cars and this is true both for some hybrid cars and electric cars. These advanced illumination systems will be available in future and this will help to reduce light emissions.

The extent of problems generated by light emissions thus will depend on the period when the car park will be in operation, as improvements to vehicles will be made in future, the amount of vehicles using the car park at any given moment, the age of the vehicles and the distribution of the parked vehicles at any moment.

OTHER CONSIDERATIONS

Parking areas have significant environmental and economic implications. Sometimes the environmental consequences of parking manifest themselves in open space and biodiversity

losses caused by the construction of parking space, and in emissions of greenhouse gases and air pollutants occurring while cars are parking. Economic consequences are reflected in the time costs incurred while parking, and in time losses from traffic congestion caused by trying to find parking space. These costs come on top of construction and maintenance costs, as well as the opportunity costs of alternative land uses. These environmental and economic costs are not always reflected in parking prices parking area operators charge. This is a negative aspect, which also induces individuals to underestimate car use costs, travel more kilometres and cause more emissions of greenhouse gases and air pollutants, and more congestion. The environmental problems associated with parking are largely caused by policies encouraging parking space oversupply. However these problems occur when there is a huge oversupply of parking which is not this case.

These negative effects are offset by less time taken to find parking places thus less time wasted, less pollution and less fuel consumption. The amenity of the area would be improved with vehicles being parked in a more orderly fashion. A scheme may have benefits from a social, community safety, housing or planning policy aspect. The reduction in the number of vehicles driving around the area searching for a parking place can improve local air quality, thus reduces traffic flow. Shared use bays may be provided for short term visitors without the need for complex visitor permit administration systems.

The parking scheme can also improve road safety by reducing the number of vehicles using an area and also the number parked in unsuitable locations. A car park management system could be used to make parking efficient and smarter. Parking spaces are getting bigger day by day and there is a need to manage all types of parking. One mismanagement in the parking can incur disorganization in the traffic flow of the area and the user a huge amount of loss if parking is not free. The system utilized ensures the layout is synchronised and efficient.

The parking systems are the necessity of today's lifestyle. With the increasing demand for cars and its usage, parking assistance is a need. There are dozens of facilities that use the parking space such as the residencies, apartments, offices, shopping malls, hospitals, and other public places. However, we face several difficulties while managing parking space.

Hence, to fulfil the goal of managing the parking space in an efficient manner it is essential to take care of all the components required in the parking space. With the advanced technologies and components used, the car park management would provide the solution. It

makes the parking space convenient, robust and organised. The layout employed in this car park is simple and directional and is designed to be easily understood. The one way option is the preferred option except in some minor areas whilst ramps are designed to have a low gradient.

Automatic systems are envisaged to be utilized. They are the tools of car park management which are fully automated and work all by themselves. They carry out different operations on their own which reduce the need for a supervisor and offer control of each activity ensuring safety and efficiency.

The management of the car park is also important. If applied in a logical and correct manner it eases the hectic management of the parking space. With these applications, the problems that occurred in parking can be easily and swiftly performed. The normal flow of parking is to be regulated and this will ensure the smooth working of the system. Good management of the car park will result in a reduction of operating costs, time saving and faster traffic flow to commuters.

3. DESCRIPTION OF THE EXTENT ENABLED BY THE INFORMATION AVAILAVABLE OF ANY LIKELY EFFECTS OF THE PROJECT ON THE ENVIRONMENT

A. CHANGES CAUSED TO THE SITE

This issue has to be dealt with in two instances: Changes caused to the site during construction and changes to the site which are envisaged after construction has terminated. These two scenarios reflect two different conditions.

The first situation is a typical situation of a building site, which all its hazards and inconveniences. It is anticipated that the duration of the project should vary from 18 months to 24 months, which is a relatively long period considering the extent and cost of this project. The usual negative effects of noise, dust , vibration and unusual operating times, are anticipated and these should be minimized. Phasing of this bike park and car park project should also fit with the general programme of works of the other projects in the immediate vicinity and form part of the Ta Qali Project. Particular care is to be given during the excavation phase: as the area was a former RAF airfield which was heavily bombed during the war, attention should be given to the possibility of unexploded bombs. Moreover as the site in question lies near the vicinity of underground water galleries, one should be aware of this fact and prepared for any eventuality. Regarding archaeological findings, the area is not known to be particularly important but the presence of any archaeological findings cannot be discounted.

After termination, this project will entail changes in the traffic flows of the area, which will be incorporated in the overall traffic scheme of the area. On the other hand, the Bike Park project seeks to promote the use of bicycle transport, thus a reduction in carbon emissions. This would also entail less traffic and less parking requirements.

B. EXPECTED RESIDUES AND EMISSIONS AND THE PRODUCTION OF WASTE

The creation of a bike park and of a car park would not necessarily entail an appreciable increase in traffic emissions as the overall scope is to divert and collect incoming traffic which would otherwise still visit the site. Another aim will be encouragement of the use of bicycles, which will in itself reduce emissions.

The most obvious construction residue from this project is the considerable amount of excavated rock. This presents a dumping problem due to the small numbers of official dumping sites presently in operation. Another problem is the increase in traffic due to the large amount of tripper trucks transporting the excavated material but a far greater problem would be the cost of dumping. Creative solutions to alleviate this problem include the re-utilization of this material to infill sites in various areas at Ta'Qali and its re-use in future land reclamation .

Other types of building residue are the usual construction material, left over such as broken stone and brick, timber shuttering, steel reinforcement, spalls, sand and stone dust.

It is anticipated that deleterious effects on the environment, which will be expected, include the increase in noise and vibration besides the usual health and safety hazards.

C. THE USE OF NATURAL RESOURCES : SOIL, LAND WATER AND BIODIVERSITY

The prime natural resource used by this project is land, which is at a premium. However optimum use of land will be made as the project will be constructed on two floors. With this fact in mind, a prerequisite of this project is its link with other projects at Ta'Qali. Since the site is presently derelict and disused, this development would also serve to remove and relocate the dilapidated structures. The six Nissen huts and the two smaller huts will be relocated as a cluster in an area at Ta'Qali , yet to be decided upon.

Another valuable resource which will be removed from the site is organic topsoil and it will be transported to nearby sites. A nature permit for the uprooting of trees and compensatory planting has already been submitted. Rain water falling on the bike park will be channelled to adjacent reservoirs situated in the concert areas. The vast turf areas would be needing a plentiful supply of water. The general aim of this project is not to dispose of natural waste material without utilizing it, preferably in other areas of Ta'Qali.

In sum, this development has to be given due importance due to its social dimension and environmental benefit. This opportunity to integrate this building with other buildings in the overall Ta'Qali project cannot be missed. Future generations would be reaping the benefits of this development.

Joseph Borg Grech