



PA 4917/09

**DEMOLITION OF EXISTING BUILDINGS AND CONSTRUCTION
OF A GRADE SEPARATED JUNCTION**

AT

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TERMS OF REFERENCE

FOR THE PREPARATION OF AN

ENVIRONMENTAL PLANNING STATEMENT

FINAL VERSION
9th September 2010

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TERMS OF REFERENCE FOR THE PREPARATION OF AN
ENVIRONMENTAL PLANNING STATEMENT FOR THE PROPOSED
PA 4917/09
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Note 1:	“Environmental Impact Assessment is the process of identifying, predicting, evaluating and mitigating the biophysical, social and other relevant effects of development proposals prior to major decisions being taken and commitments made” (IAIA, 1999) ¹ . The EPS is to document clearly and impartially the impacts of the proposal, the proposed mitigation measures and impact significance. In accordance with best practice, this shall be carried with professionalism, rigour, fairness, objectivity, impartiality and balance.
Note 2:	<p>The Malta Environment and Planning Authority (MEPA) reserves the right to request additional studies should the findings of the EIA not be sufficient to adequately inform the decision making process or if the EIA identifies matters which should be subject to further (or new) studies.</p> <p>All requirements set out in these terms of reference must be complied with. If there are any sections that the consultant deems that they are not relevant to this study, the consultant shall inform MEPA accordingly fully justifying his/her reasoning. Should, during the process of the EIA the consultant discover that any environmental feature, not included in these Terms of Reference needs to be studied, the consultant shall inform MEPA immediately, justifying his/her reasoning.</p>
Note 3:	Difficulties, including technical difficulties and lack of information, encountered by the consultants in compiling the required information shall be made clear. All references to published works and sources of information shall be duly acknowledged. No material may be incorporated by reference unless it is reasonably available for inspection by potentially interested persons within the consultation period. Any material which is based on proprietary data which is not available shall not be incorporated by reference.
Note 4:	Experts contributing to the EIA should be specifically asked to consider impact interactions and to communicate information between each other.
Note 5:	The relevance of Maltese Legislation and Maltese Planning Policy (notably the Structure Plan for the Maltese Islands and Local Plans for the surrounding areas), other policies and international policies and conventions shall be discussed and the compatibility (or otherwise) of the proposal with these laws and policies should be described and analysed in the relevant chapters. Policies on the following should also be discussed: conservation areas and zones, marine protection, protected buildings and sites, areas of natural beauty (including localized scenic spots/coves), areas of scientific, ecological, archaeological, agricultural, architectural, historical, antiquarian or artistic value, aquifer protection and run-off.
Note 6:	A list of all permits, licenses and other forms of authorisation (other than the development planning permit) which must be obtained by the applicant in terms of any other law in implementing the development if permission is granted must be included in the EIS. If consultants are uncertain whether an authorisation is necessary, they shall so indicate in the EPS.
Note 7:	Following the review of the EPS, MEPA submits comments to the EIA consultants for further clarifications. Once the consultants respond to these comments to the satisfaction of MEPA, a second draft of the EIS, that includes these clarifications, must be prepared. MEPA will

¹ International Association for Impact Assessment (IAIA). (1999). *Principles of Environmental Impact Assessment Best Practice*. Document published by the IAIA in cooperation with the Institute of Environmental Assessment, UK.

only accept an Addendum containing these clarifications if the clarifications are few or where the EIS is still easy to follow with the Addendum.

Note 8: Any requirement for confidentiality of any section of the EPS must be justified and a formal request in this regard must be submitted to MEPA. Should MEPA grant confidentiality for specified sections, alternate material that excludes confidential details must be provided for public consultation.

An Environmental Planning Statement (EPS) is to be prepared for the proposed development (PA 4917/09 Demolition of Existing Buildings and Construction of a Grade Separated Junction, site At, Triq Mikiel Anton Vassalli and Triq Tas- Sliema, Gżira/San Ġwann, and, Triq M. A. Vassalli, Msida) required by Schedule IA of the Environmental Impact Assessment Regulations 2007, (Category II Projects Sections 2.1.2.1 and 2.1.2.2). The components of the EPS are to be:

- i. A **Coordinated Assessment Report**, in conformity with Sections 1 - 4 and their contents as outlined below. This report should describe the project in its totality; and
- ii. A **Separate Appendix** containing all original survey reports as prepared by individual consultants for specific topics.
- iii. A separate **Non-Technical Summary** of all sections of the technical report (to be also provided in digital format and in both the Maltese and English languages). This summary should include any assumptions made in the report; key features of the site (including surroundings) and proposed development; key impacts and any proposed mitigation measures to minimise costs (externalities) and maximise benefits arising from the proposed development. Technical terms, lists of data and detailed explanations of scientific reasoning should, where possible, be avoided.
- iv. Two **hard copies** and two **printable digital copies of the first draft of** all elements of the EPS, which includes all the above, including any plans, maps, photographs, graphs, and any other contents of graphical/visual nature contained within the EPS. Once the EPS has been certified two **digital copies of the certified document** is to be submitted to MEPA.
- v. Conformity with sub-Regulations 28 and 29 of the EIA Regulations (refer to Appendix 1 to these Terms of Reference).

1.0 Description of the Proposed Development

Note 9: The description of the proposed development is to include consideration of the aspects outlined below. This description must take into account the entire proposal and any ancillary facilities connected with, or arising due to, the project (such as any infrastructure required). Where relevant this section should include maps, plans and diagrams.

1.1 Justification for the Proposal

1.1.1 Objectives

A description of the environmental, social and economic objectives which the development will seek to address, and whether such objectives stem from current international obligations and national, regional or local policy, plans and guidance.

1.1.2 Demand

A description of the current and expected demand for the proposed upgrading of the existing road. The study shall explain how the proposal (its size and nature) will address this demand.

1.1.3 Future developments

Future developments/needs, if any, of the development shall also be addressed.

1.2 A Description of the Physical Characteristics and Features of the Project including Constructional Features

1.2.1 Description of the proposed development including details of the proposed site layout showing the design (size, area, height, volume, layout, proposed elevations [scale 1:2500]), landscaping, methods of construction, location of all structures and proposed access arrangements as well as any works involved in the removal or displacement of existing structures or land uses.

1.2.2 Land use requirements for decommissioning, construction and operation, and site details should be identified, including land take required for facilities ancillary to the proposed development, site preparation works, excavations and disposal of surplus material. Proposed facilities (including infrastructure, storage, servicing facilities, security etc.) in terms of size, area, height and volume, proposed elevations, layout, method of construction, etc.

1.2.3 Proposed project management arrangements during site clearance, excavation, construction and operation phases. These should include a description of:

- expected duration of all phases;
- types and quantities of raw materials and primary resources including water, energy, stone and other resources to be consumed;
- measures to reduce consumption of primary resources; and,
- season, frequency and duration of interventions on land.

1.2.4 The depth and/or levels of excavation, volume and type of excavated material required for the proposal and any ancillary facilities, are to be quantified, clearly identifying the types of material envisaged to be excavated.

1.2.5 Identification of the routes that construction vehicles will use to and from the site, the number and size of construction vehicles and their respective frequency of use, and the time of day when construction traffic is likely to be heaviest.

1.2.6 Identification of the alternative route(s) that transit traffic will use whilst works are carried out on the junction, and the expected frequency of use of the identified route(s), and the time of day when traffic is likely to be heaviest.

- 1.2.7 Facilities for the on site servicing of equipment, vehicles and other machinery.
- 1.2.8 Services and utilities including power.
- 1.2.9 Water storage, runoff and water management including reservoirs.

1.3 A Description of the Operational Features of the Project

- 1.3.1 Residues and emissions by source, type, quantity, composition and concentration. These should include estimated light and noise levels and gaseous/ particulate emissions to the atmosphere within the development and at the site boundary clearly indicating the time during which light, air and noise sources will be active; distribution of dust, if any and construction of the development, on site disposals and from waste transport, discharges to water and emissions to air, if any, vibration and light sources.
- 1.3.2 Estimates of the various water consumption requirements of the development and the identification of the sources of water to be used and reuse of grey water/ sewage, etc., storm water management, landscaping schemes, etc.
- 1.3.3 A description of water reduction/saving measures including water for irrigation, water storage, runoff water management (including facilities for storage and eventual use of storm water runoff).
- 1.3.4 Power (including the connected load in MW or MVA and the overall power factor). Estimates of the energy consumption requirements (annual MWh), split in terms of end-use (e.g. street lighting etc.) and which reflects the expected use. An estimate of the level of energy consumption that the development could entail should be provided.
- 1.3.5 Details regarding energy and water issues during operation should include the following:
 - An estimate of the energy and water consumption of the project (during operation);
 - The energy and water sources that will be used to meet the demand and the extent to which the project shall be self-sustaining;
 - Energy performance of the design of the development, including construction materials, etc.; and,
 - Integration of low/zero carbon technologies to meet, as far as possible, the building's energy needs; and,
 - Consideration of energy efficiency measures.

1.4 Waste Management

This section is aimed at assessing the waste management implications that are likely to arise from the proposal, as well as proposing solutions how such waste shall be managed using the Best Practicable Environmental Options available. Every possible effort shall be made to minimise the waste generated and to divert waste to reuse or recycling rather than disposal. This section shall address the following requirements:

- 1.4.1 The assessment is to cover all wastes generated, including hazardous wastes, wastes generated from ancillary facilities required on site and wastes which may arise from accidental spillages and leakages, and shall be subdivided into the following project phases:
 - Construction (including site clearance, demolition and excavation); and,

- Operation: waste management infrastructure required during the operational phase.
- 1.4.2 The following information to be provided for each waste stream and shall be presented **separately** for the different phases listed above:
- Identification of processes or activities, resulting from the proposal that would result in waste generation;
 - The European Waste Catalogue Code for each waste stream, as per Schedule 1 and the corresponding H code (if applicable) as per Schedule 2 of the Waste Management (Permit and Control) Regulations, L.N. 337 of 2001;
 - The projected quantities for each type of waste (details of assumptions made and the methodologies adopted for achieving such estimates should also be included);
 - Information on waste handling and storage on site as well as offsite management; and,
 - The frequency and method of transportation offsite.

This information shall be presented in table format as follows:

PHASE							
Activity	Waste Description	EWC Code	H code	Quantity Projected	Internal handling and storage	Frequency and Method of Transport to the disposal site	Offsite waste disposal site/waste management company

- 1.4.3 Inclusion of layout plans (to scale) clearly showing all relevant waste management infrastructure required (e.g. bunded areas for storage of waste fuels, wheel-wash facilities, etc.), clearly distinguishing between temporary and permanent structures for each phase.

1.5 Consideration of Alternatives

1.5.1 *Alternative Routes and/or Layouts*

An identification of **all** possible routes (including the proposed routes and other suitable routes) and/or layouts of the existing road, including ancillary facilities such as junctions, based upon the possibilities and constraints posed by the physical characteristics and features of the projects, its operational features and land-use requirements. A detailed description of these routes and/or layouts and site-specific environmental impacts shall be provided. This section should also include the zero option, that is, an assessment of the way the site would develop if it were left in its natural state (in this case, if the existing road network is used).

The EPS should give a clear conclusion of the Best Practicable Environmental Option whereby the environmental benefits and loss for each option are weighed against each other, taking into consideration the likelihood, scale and permanence of the each of the effects mentioned in the assessment.

1.5.2 *Alternative Technologies*

An assessment of the alternative technologies (including both construction and operational phases) should be considered. This section should contain a detailed explanation of the proposed technology to be used (including that for reducing emissions) and an assessment of alternative technologies which can be used to achieve the objectives of the proposed development. The information shall be presented in tabular format indicating technologies and associated environmental impacts, in sufficient detail.

- 1.5.3 The findings on the environmental impacts of alternative routes shall be combined with those on the environmental characteristics and environmental impacts in the alternative routes. This will enable the identification of best technology combinations. The technical and planning reasons why a particular technology and route was selected in preference to all the others must be clearly explained. The discussion should cover demolition, construction, operation and distribution aspects. The findings of the assessment of alternatives shall also be summarized in a tabular matrix for ease of comparison.

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2.0 A description of the Proposed Site and its Surroundings

Note 10: This description is identified by the area of influence for each relevant parameter. The area of influence for each parameter shall be determined by the consultants who shall also justify the extent of the chosen area of influence. This must be **APPROVED** by the Malta Environment and Planning Authority prior to commencement of the EIA.

The following section shall comprise the baseline studies for a number of issues with respect to the proposed development. The studies shall be carried out on the following:

2.1 Land use

A description of the present land uses including settlements, workplaces, places of worship, production, commercial, recreational, and other uses located within an area of influence from the site. Details including nature, magnitude, proximity to site etc. should be included.

2.2 Land Cover and Agriculture

The study shall include a description of the land cover, the agricultural characteristics and potential, including soil. Any rubble walls that may be affected by the proposal shall also be identified.

2.3 Geology, Hydrogeology and Hydrology

A baseline study for these features shall be carried out. Details, baseline surveys and characterisation of sites' hydrological conditions should be provided. Baseline surveys on characteristics of aquifers including aquifer properties, sources of recharge of groundwater, pumping and abstraction, characteristics of watercourses including discharges and withdrawals, catchment areas and drainage patterns, run-off including volume and route taken by run-off.

Geo-Technical Survey

A geo-technical survey of the material to be excavated and rock mass forming the foundation of the proposed structure shall be submitted. A number of core samples shall be carried, the number and location of which shall be as approved by MEPA prior to carrying out of any *in situ* tests. Rock sampling and testing shall comply with the relevant BS Standards, including BS 5930:1999. This description shall extend to at least 3m below the deepest level of the proposed development (taking into consideration any facilities proposed underground). This section shall provide the information required for establishing the economic feasibility for the reuse of the excavated material (including any necessary studies to determine such feasibility).

2.4 Landscape Character and Visual Amenity

Landscape Character

A description of the landscape area of influence or landscape setting of the proposed site (to be approved by MEPA), identifying the component Character Areas/ Local Landscape Tracts and the landscape elements and characteristics thereof. In defining these, reference shall be made to MEPA's 'Draft Landscape Assessment Study'.

The degree of sensitivity of each Character Area and Local Landscape Tract shall be indicated and justified.

Visual Amenity

The Zone of Visual Influence (ZVI) of the proposed site without and including the proposed development shall be identified and the methodology used to ascertain same shall be described. Viewpoints within the ZVI shall be identified that are representative of short, medium and long distance views towards the Application Site. The ZVI and viewpoints shall

be subject to the approval of MEPA. To assist in this approval process MEPA will require a base photo from each of the proposed viewpoints. Such photos shall be in compliance with the criteria set out further below.

The visual amenity of each view shall be described and the numbers and sensitivity of the receptors likely to partake of the view from each viewpoint shall be identified and the degree of sensitivity of each shall be indicated and justified.

Reference should be made to the *Guidelines for Landscape and Visual Impact Assessment*, 2nd Edition (*The Landscape Institute and IEMA*, 2002).

2.5 Ecology

An ecological study of the Wied Ghollieqa, a Special Area of Conservation of National Importance shall be carried out.

The ecological study should include:

- a full environmental description of the area, to **include** edaphic constraints, current land use and potential for development;
- a detailed survey with adequate maps, plans, diagrams, photographs of the biotopes/habitats types of the area on the basis of the Palaeartic Habitat Classification;
- a detailed survey with adequate maps, plans, diagrams, photographs of the protected species, and any endangered, rare, unique, endemic² or otherwise important species known or reported from the area in question;
- details of all biotopes/habitat types, **flora and fauna**, wooded areas, valleys and other landscape and habitat features to be removed, retained, enhanced, supplemented or potentially affected, and measures for their protection must be described, with an emphasis on any protected areas, protected species, and any endangered, rare, unique, endemic or otherwise important species and biotopes/habitat types known to be found in the locality;
- the potential or expected impact of the proposed project on the features of ecological importance;
- A tree survey shall be provided and any trees to be uprooted (or otherwise affected by the development) must be identified.

Particular reference is to be made to any species or biotopes/habitat types found in the area under study and listed in relevant nature protection³ legislation, relevant nature protection treaties and the EU Nature Protection Acquis.

Refer to Appendix 2 for Terms of Reference for Appropriate Assessment.

² As defined in Article 3 of Legal Notice 311 of 2006.

³ Nature Protection regulations include, amongst others, the Environment Protection Act [Act XX of 2001], the Development Planning Act [Act I of 1992 as amended], the Sand Preservation Act [Act XVI of 1949 as amended], the Fertile Soil Preservation Act [Act XXIX of 1973 as amended] and the Filfla Nature Reserve Act [Act XV of 1988]; various Legal Notices, including LN 19/92 as amended, 22/92, 76/92, 25/93, 49/93 as amended, 146/93 as amended, 66/97, 160/97, 196/97, 161/99, 12/01, 335/01, 160/02, 167/02, 169/02, 170/02, 194/02, 290/02, 203/03, 257/03, and 311/06 as well as various Government Notices, including GN 85/32, 269/33, 328/49, 877/03, 241/97, 223/05, and 869/09 and the GNs declaring scheduled property of ecological and scientific importance.

2.6 Noise and Vibration

Information on the prevailing background noise levels both in terms of frequency and intensity should be given. This baseline survey should follow parameters given in BS4142:1997. Locations for monitoring background noise should be chosen bearing in mind the following:

- Other existing noise sources in the area, including increase in traffic and congestion in the area;
- Other potential noise sources in the area, including new developments;
- Sensitive receptors, residential areas, schools, hospitals, etc.;
- Sensitive recreational areas in the vicinity; and,
- Features that might shield noise, topographical, vegetation, etc.

These locations must be approved by the MEPA prior to commencement of the EPS studies.

2.7 Air Quality

This section shall clearly establish the current background levels of pollution, including dust and comparison to the limit values as specified in EU legislation. Details on prevailing wind and climate conditions shall also be included, amongst other relevant parameters. Studies of the current background levels are to be conducted over 6 weeks. Detailed studies should be as follows:

1. NOx: Should the proposed development be sited in an area with heavy traffic, real-time measurement of hourly concentrations of NOx, particularly during rush hours is required. Diffusion tube monitoring should take place over 2 3-week periods, with 2 3-week averages and 1 6-week average that would be compared to the annual limit value as per relevant EU Directives.
2. PM10: Daily measurements of PM10 concentrations are to be compared with the daily limit values. Furthermore, 2 3-week averages and 1 6-week average is to be compared with the annual limit value.
3. PM2.5: 2 3-week averages and 1 6-week average is to be compared with the annual limit value.

A method statement shall be submitted to MEPA for approval, indicating the sampling points for the air-quality monitoring programme, one of which should be at the most sensitive receptor in the prevailing wind direction.

A traffic model (preferably DMRB or any other equivalent) shall also be used in order to estimate the effect on air quality of the increase in the traffic flow due to the project.

2.8 Existing infrastructure and utilities

Description of the current infrastructure and utilities available on site (including water supply, energy supply, sewerage, access routes, etc.)

2.9 Any other relevant environmental features

3.0 Assessment of environmental impacts and risks of the proposed development

Note 11: All significant impacts of and risks posed by the proposed project **during construction and operation**, should be assessed, given the environmental characteristics of the site outlined in Section 1 and 2 and the policies outlined in Section 3. A descriptive and quantitative analysis (including magnitudes and timing) of the impacts of the proposed development should be made, and presented in summary chart format. The various techniques, methods and assumptions used in the analysis and predictions should be outlined.

The impact assessment should include:

- i. Description of the impact;
- ii. Magnitude and significance;
- iii. Duration (temporary or permanent);
- iv. Extent (in relation to site coverage and surroundings and associated features);
- v. Direct or indirect impact;
- vi. Adverse or beneficial;
- vii. Reversible or irreversible effects of the impact and extent or irreversibility as well as description of any associated conditions/assumptions for irreversibility;
- viii. Sensitivity of resources to impacts;
- ix. Probability of impact occurring;
- x. Confidence level/limits to impact prediction;
- xi. Scope of mitigation/enhancement; and
- xii. Residual impacts.

Worse case scenarios should be assessed where relevant.

3.1 Impacts on Land and Surrounding Land Uses

The impacts on land including impacts on local topography e.g. stability, erosion; chemical emissions, deposits and waste. Impact on land uses and the protective designation of the site and surroundings.

3.2 Effects on Agriculture

The impact on the proposed site and surrounding agricultural uses, including rubble walls and other rural structures.

3.3 Effects on Geology, Hydrogeology and Hydrology

This study shall assess the impacts arising from the proposed development with respect to the geology, hydrogeology and hydrology of the site. It shall assess the significance of impacts on soil, aquifers and water resources, permanent and/or temporary changes to the hydrologic regime of watercourses which may traverse the site, permanent and/or temporary changes to the hydro-geologic regime of site including changes to the mean sea level aquifer and its recharge.

The potential impacts on water flow in the valley and the subsequent impacts on water-dependent biological elements in the valley should be examined, including an assessment on the potential impacts on water quality.

3.4 Effects on Visual and Landscape Character

The assessments shall have regard to the entire proposed development including all ancillary development associated with it. The basis for the assessment of the significance of the impact of the proposed development shall be described.

The Landscape and Visual Amenity Impact Assessments must also have regard to committed development within the Area of Influence or Viewshed that is likely to affect the quality of the landscape or the visual amenity of the Application Site (without and with the proposed development).

3.4.1 Assessment of the Impact on the Landscape

This shall comprise the identification and description of the predicted changes in the landscape attributable to the proposed development. The effects of the changes on the quality of the landscape / elements in each of the identified landscape character areas / local landscape tracts, and an assessment of the effects of such changes on the previously identified sensitive receptors of the landscape shall be submitted. The predicted magnitude of the effects on the sensitive receptors shall be justified.

3.4.2 Assessment of the Impact on the Visual Amenity

This shall comprise the identification and description of the predicted changes to the visual amenity of the proposed site attributable to the proposed development. The effects of the changes on the quality of the visual amenity of the proposed site as viewed from each of the approved viewpoints and an assessment of the effects of such changes on the previously identified sensitive receptors of the visual amenity shall be submitted. The predicted magnitude of the effects on the sensitive receptors shall be justified.

The base photos / photomontages to be submitted shall comply with the following:

a) The location of each viewpoint shall be shown on a map that also depicts the viewshed for the proposed site as described above. The visual angle of the photograph shall also be depicted. In this regard, it is recommended that the visual angle should not be greater than 50 degrees. However, the use of stitched photos that illustrate the field of vision towards the Application Site from each viewpoint is acceptable on the proviso that such photos are additional to the 50 degree photo

b) Each photo / photomontage submitted shall:

- Be at least A3 in size. Strips which are A3 in width but not in length will not be accepted except for additional illustrative material;
- identify the date and time at which it was taken;
- Be of good quality, with faithful colour reproduction. The photos shall be taken in good weather and, unless otherwise directed by MEPA, shall be taken at least 2 hours after sunrise and 2 hours before sunset. Colours should not be digitally or otherwise manipulated. The image should have a printing density of 200 dots per inch or better. In some instances, digital images having a resolution of 1024 x 728 or better should be requested for multimedia presentation purposes;
- Be taken in such a manner that near field objects do not overpower or dominate features near the image plane passing through the project area;
- Be taken from a height above ground level that is representative of the eye level of the viewer and such height shall be documented;
- Shall ensure that any additional/replacement structures or features depicted in the photomontages shall have a scale which proportionately tallies with the existing nearby features; and
- Show in the photomontage(s), if applicable, the landscaping scheme proposed for the development. The maturity of the landscaping scheme as shown (which shall not be less than 5 years after planting) shall be indicated. The photomontages should also be submitted that do not include landscaping scheme.

3.5 Effects on Ecology

The impacts of the proposed development upon the ecological characteristics of the site including (but not restricted to) disturbance, noise, vibrations, emission of particulates and chemicals in air or water runoff, during construction and operation. Impacts due to loss of, damage to and alteration of habitats (including structures such as rubble walls) shall be assessed and impacts due to the possibility of increased access of the site. The assessment should include the impact of the development on the status of the site with respect to ecological features and the ecological condition of species.

3.6 Effects on Air Quality

Emissions to air, during construction and operation by source, type, quantity, composition and concentration and the distribution of each. This shall include dust, as well as chemical emissions, if any, due to machinery and/or associated activities.

3.7 Effects of Noise and Vibrations

This shall include an assessment of maximum noise levels expected to be generated, variations during the day and night and noise attenuation (the reduction in noise levels as a result of 'environmental' factors, e.g. mufflers at source, insulation of a building). The effects of noise and vibrations on the surrounding community arising during the demolition, construction and the operation of the proposed development shall be assessed. The assessment should also consider road traffic associated with operations on the site. Noise sensitive receptors should be identified and agreed with MEPA. It is recommended that BS4142:97 is used for the noise assessment and BS6472 (relating to human exposure to vibration) and BS7385 (covering the effects on buildings) is used when studying vibration.

3.8 Effects of Water Runoff

This assessment shall identify any liquid discharges to land, sea and sewer, clearly quantifying the estimates and their likely contents and effects.

Any potential contamination of surface water should be identified and assessed. This assessment shall consider the effect of leaching storage products into the bedrock and effects on the hydrosphere, and describe how these will be mitigated using appropriate timing and construction techniques. This must also include a map indicating the areas to be used for the storage of equipment and heavy machinery, re-fuelling and service areas and how these are designed to contain any leakages that might occur without putting the quality of water at risk.

Water Harvesting

This should include a methodology of the proposed measures to be taken to ensure that the harvested water quality is good for agricultural use.

The document should also consider a monitoring program of the hydrological impacts of the development during the operational stage, and this at regular intervals.

3.9 Effects on Cultural Heritage

ToRs for a Cultural Heritage Assessment at Appendix 3 refers.

3.10 Secondary Impacts

Mainly arising from the extraction and consumption of resources necessary to implement the project, as well as from developments supporting the project (e.g. new, sewers, power lines, pipelines, telecommunications), such as water, energy, construction materials, and the resultant need (if any) of development of new supplies.

3.11 Other Environmental Effects

Other environmental effects other than those identified in Sections 3.1 – 3.9 shall be described and their impacts assessed.

3.12 Cumulative Effects

This section shall refer to all the impacts of all the aspects of the development and shall assess:

- the effects resulting from the **interaction of separate effects** listed above as well as any other relevant impacts, and
- the impacts of the project viewed in terms of other projects (i.e., not in isolation), including existing and proposed.

3.13 Interaction between any of the foregoing

Experts contributing to the EIA should be specifically asked to consider impact interactions and to communicate information between each other. In addition, any environmental components not listed in the Directive or Regulations that are likely to be affected should not be discounted.

Predictions of impact interaction will nearly always involve a greater degree of uncertainty than prediction of impacts on individual components. This should be referred to in the EIA rather than ignored.

EVAL

4.0 Design of Mitigation Measures, Identification of Residual Impacts and Monitoring Programme

4.1 Mitigation Measures

This should include a description of the measures envisaged to prevent, minimise and where possible, offset any significant adverse effects on the environment of the project. Such measures could include technological features; operational management techniques; enhanced site-planning and management; aesthetic measures; conservation measures; reduction of magnitude of project; and health and safety measures.

4.2 Residual Impacts

Any residual impacts, that is those impacts that cannot be mitigated or those remaining impacts following implementation of mitigation measures, should also be described, quantified and presented in a tabular format.

4.3 Monitoring

The consultants must propose a monitoring program which should take into account monitoring of those features that are considered to be impacted negatively or the impact on which is uncertain. The program must be proposed at different stages: before, during and after construction. Details regarding type of and frequency of monitoring must also be given. This program shall include an audit and evaluation of forecasts, predictions and mitigation measures made in the EPS.

Appendix 1: Sub-Regulations 28 and 29 and the EIA Regulations.

Environmental Impact Assessment Regulations, 2001

Regulation 28 and Regulation 29 of the EIA Regulations, 2001

Regulation 28

List of Consultants (Extract from the EIA Regulations)

28. (1) The environmental impact statement shall list the registration number and the names of the consultants and contributors responsible for the preparation of the environmental impact statement, environmental survey reports, appendices, non-technical summary and other components of the statement.

(2) The consultants who are responsible for a particular analysis, including analysis in the environmental survey reports, shall be identified.

(3) All consultants and contributors employed in the environmental impact assessment shall sign a declaration stating that the particular study (or part thereof) was solely carried out by them. This signed declaration shall be included with each environmental survey report included with the environmental impact statement.

Signed declaration in accordance with Regulation 28 (3)

Director of Environment Protection
MEPA

I _____, who carried out the study (or part thereof) on _____ for the EPS of PA 4917/09 for the proposed demolition of existing buildings and construction of a grade separated junction at Triq Mikiel Anton Vassalli and Triq tas-Sliema, Gżira/San Ġwann, and Triq M. A. Vassalli, Msida, hereby declare that such study was solely carried out by me.

Date

Signature

This declaration is to be included with each environmental survey report included with the EPS.

Regulation 29

Conflict of Interest (extract from the EIA Regulations)

29. (1) In the interest of fairness, objectivity and the avoidance of bias, all consultants shall be required to sign and abide by a declaration that they have no personal or financial interest in the proposed development.

(2) The Director of Planning and the Director of the Department shall not approve consultants or consultancy firms that are in any way associated with any company, association or grouping that has any direct or indirect personal, association or grouping that has any direct or indirect personal, professional or financial interest in the proposed development.

(3) The Director of Planning and the Director of the Department shall not approve any environmental impact statement or environmental planning statement produced by a consultant or group of consultants, one or more of whom does not comply with the provisions of sub-regulations (1) or (2) of this regulation.

Signed Declaration in accordance with Regulation 29 (1)

Director of Environment Protection
MEPA

I _____, hereby declare that I have no personal or financial interest in the proposed development, namely the demolition of existing buildings and construction of a grade separated junction at Triq Mikiel Anton Vassalli and Triq tas- Sliema, Gżira/San Ġwann, and Triq M. A. Vassalli, Msida. Moreover, I declare that I am not in any way associated with any individual, company, association or grouping that has any direct or indirect, personal, professional or financial interest in the abovementioned proposed development.

Date

Signature

Such declaration is to be sent to MEPA when proposing the list of EIA Consultants prior to their approval or otherwise.

Appendix 2: Terms of Reference for the Preparation of an Appropriate Assessment

Screening of the proposed demolition of existing buildings and construction of a grade separated junction at Kappara has not satisfactorily eliminated the potential of the project to cause significant impacts on Wied Ghollieqa designated, amongst other things, as a Special Area of Conservation of National Importance as per G.N. 223 of 2005. Thus, the need for an assessment according to Article 19 of L.N. 311 of 2006, (based on Article 6 of Directive 92/43/EEC [EU Habitats Directive]) has been identified.

Note 1:	The applicant is to forward consultants for approval by the Malta Environment and Planning Authority prior to the commencement of the Appropriate Assessment (AA).
Note 2:	The area of influence for each parameter shall be determined by the consultants who shall also justify the extent of the chosen area of influence. This must be approved by the Malta Environment and Planning Authority prior to commencement of the AA.
Note 3:	Where available, published works should be made use of without any necessary duplication of work.
Note 4:	Unless otherwise stated within the Terms of Reference, in the absence of specific conservation objectives drawn up by the Malta Environment and Planning Authority, the provisions of Directive 92/43/EEC (Habitats Directive) should apply, that is: <ul style="list-style-type: none">• When the species have a favourable conservation status, this is retained not reduced; and• When the conservation status is not favourable, this is improved.

The Appropriate Assessment report, to be submitted as a **standalone document**, must provide the following information, in a manner that exhaustively addresses the outstanding issues resulting from the screening matrix that was finalised on 26th April 2010.

1. Project Description

A description of those elements of the project, namely demolition and construction works that are likely to give rise to significant effects on the habitats and species of the Natura 2000 site.

2. Site Description

Identification of the important species and habitats found on site.

3. Impact Assessment vis-à-vis important habitats and species

An assessment of the predicted impacts on important species and habitats within the area of influence arising from the project proposal. These should be identified as direct/indirect and short/long-term. Any cumulative impacts shall also be identified and any uncertainties and gaps in information should be acknowledged.

4. Impact Assessment vis-à-vis site integrity

An evaluation of the way in which the integrity of the habitats and species (determined by the structure and function of the site and its conservation objectives) is likely to be affected by the project. Such an evaluation should assess if the proposed project has the potential to affect:

a. Conservation objectives:

- cause delays in progress towards achieving the conservation objectives of the site
- interrupt progress towards achieving the conservation objectives of the site
- disrupt those factors that help maintain the favourable conditions of the site
- interfere with the balance, distribution and density of key species that are the indicators of the favourable conditions of the site

b. Other indicators:

- cause changes to the vital defining aspects that determine how the sites function as a habitat or ecosystem
- change the dynamics of the relationships that define the structure and / or function of the site
- reduce the population of key species
- result in disturbance that could affect population size or density or the balance between key species
- result in fragmentation
- result in reduction or loss of key features of the site.

5. **Mitigation Measures**

Measures to eliminate and/or mitigate adverse effects on the habitats and species according to Habitats Directive and the integrity of the site should be identified including:

- A list of measures to be introduced;
- An explanation of how the measures will eliminate and/or mitigate adverse effects on the species and integrity of the site;
- Evidence of how they will be implemented and by whom;
- Evidence of the degree of confidence in their likely success;
- A timescale, relative to the project or plan, when they will be implemented; and
- An explanation of any proposed monitoring scheme and how any mitigation failure will be addressed.

6. **Residual Impacts**

A prediction of residual adverse effects of the project on the national SAC, following the implementation of the mitigation measures, and their significance.

7. **Conclusion on proposed project**

The appropriate assessment must arrive at a clear conclusion whether the proposed project is expected to have a significant adverse impact on the national SAC or not.

8. **Alternative solutions**

A list of alternatives to the proposal is to be submitted. Examples of alternatives may include, but not necessarily limited to alternative technologies and alternative layouts. The zero-option should also be considered. Each alternative is to be thoroughly assessed by comparing it with the original plan and clearly indicating the relative effects on the site habitats and species.

Appendix 3: Terms of Reference for the Preparation of a Cultural Heritage Assessment

Survey of ArchAeological and Cultural heritage Assets

Note: All requirements set out in these terms of reference must be complied with. If there are any sections, which are not relevant to this study, the reasons for not including the relative information in the study must be stated and justified. Moreover, if there are any aspects that the consultants deem to be important but which have not been requested, these are to be included together with a justification for their inclusion.

1. OBJECTIVES

The purpose of the Report of Survey is to provide a comprehensive study on the cultural heritage assets, consisting of archaeological, historical, architectural, industrial heritage, rural and vernacular features, including rubble walls. The report shall:

- a. Identify, document and present all relevant information about cultural heritage assets within the area of study.
- b. To describe and analyze the cultural landscape.
- c. Assess the cultural heritage significance of each feature and of the area of study.
- d. Propose statutory and physical protection of the individual features and of the site.
- e. Identify potential impacts on the cultural heritage features arising during both the development phase and the operative phase of the development.
- f. Propose mitigation of impacts arising from proposed development and a monitoring programme during construction and operation of the development.

The survey and report should be specific to the identification, assessment and valorization of the cultural heritage value of the features within the area of study, irrespective of land ownership and any proposed development.

2. AREA OF STUDY

The area of study for the purpose of this report shall be proposed by the consultant and must be indicated on a site plan, subject to approval by MEPA in consultation with relevant agencies.

3. CONTENT OF REPORT

3.1. STUDIES AND SURVEYS

3.1.1. Desk-Top Study

The desktop study shall seek to collate information about the cultural assets present, events that have taken place, the cultural relevance of the site throughout history, and the archaeological potential within the area of study. This study shall include:

- a. Reference to existing literature, old manuscripts, reports of previous discoveries.
- b. Study of toponyms.
- c. Analysis of cartographic, photographic, and other graphic material.
- d. A bibliography of sources consulted.

3.1.2. Site Survey

A surface visual survey within the area of study shall:

- a. Identify and record surface features, also noting their condition. An attempt shall be made to describe typologies of cultural features, including rubble walls. Typologies should be based on form, materials, technology, use intention, possible dating/phasing, and other architectural details that enable the distinction of one type from the other.
- b. Identify and record pottery scatters. However, the collection of pottery shards is not allowed.
- c. Recording of the features on a map (scale 1:2500).
- d. The investigation of potential archaeology (buried or surface) should be considered as a reserved matter and as directed by the Superintendence of Cultural Heritage.

3.1.3. Recording specifications

Relevant information for each feature shall be presented in data cards as supplied by the MEPA (specimen attached at the end of this document). Each feature should be individually identified with a consecutive reference number. The individual specific reference number shall be used throughout the report when cross referencing with maps, photos data cards and text. The information on each card for each feature shall include:

- a. Short description.
- b. Co-ordinates recorded up to 5 digits for each northings and eastings based in the local/UTM grid reference.
- c. Locality and address.
- d. Site indicated on a map to a scale of 1:2500
- e. Photographs
- f. Scaled diagram/sketch
- g. The significance of each feature, with a proposed grading following Structure Plan UCO and ARC policies.
- h. Existing and/or proposed legislative and physical protection.
- i. Current and proposed use/enhancement.
- j. Bibliographical references.
- k. Name of surveyors and date of compilation.

3.2. STATUTORY PROTECTION

Reference shall be made to local heritage conservation legislation, international conventions and charters, Structure Plan policies, Local Plans, Scheduling and other relevant documents related to the protection of cultural heritage.

3.3. DESCRIPTION AND ASSESSMENT OF IMPACTS

All significant impacts and risks posed by the proposed project, **both during construction and during operation**, shall be assessed. The impacts may include:

- a. Visual impact on the cultural landscape.
- b. Impact on the heritage assets and archaeological remains (whether on the surface or buried).

3.4. MITIGATION MEASURES

This should include a description of the measures envisaged to prevent, minimise and where possible offset any significant adverse effects on the cultural heritage assets and their setting by the project, (including reference to consideration of alternatives). Such measures could include technological features; operational management techniques; enhanced site planning and management; aesthetic measures; conservation measures; reduction of magnitude of project; and health and safety measures.

3.5. MONITORING

A long-term monitoring programme of the impacts of the development on the cultural heritage assets and their setting shall be proposed. This shall include data gathering on the quality and progress of critical heritage features identified in the previous section, and spot checks. Therefore the following are required:

- a) A monitoring programme during any necessary scientific archaeological investigations, provided official written consent is obtained from the Superintendent of Cultural Heritage.
- b) A monitoring programme during construction.
- c) A monitoring programme during operation.

4. ACADEMIC COMPETENCE

The survey and report shall be undertaken by suitably qualified person/s holding a degree in archaeology (for archaeology-related items) and/or history of architecture or related subject (for historic buildings related items). The proposed candidate/s shall be approved by MEPA in advance of the commencement of the study.

PLANNING AUTHORITY PROTECTIVE INVENTORY OF THE MALTESE CULTURAL HERITAGE HERITAGE DATA CAPTURE SHEET						Ref. No.
Location		Category	Type	Site Location (Address)		
Eastings		Northings	Feature	Period - Year		
S.S. No. 1	S.S. No. 2		Description			
S.S. No. 3	S.S. No. 4					
Date						
Neg. No.	Film No.					
Present Utilization						
Existing Legal Protection			GN. Number	GN. Date		
Comments						
Buffer Zone	A	B	C	D	E	Others
Eastings						
Northings						
Site Map						
Scale 1 : 2500						

Archaeological Characteristics – Sketch/Scaled drawings:

Condition:

Degree of Protection (Structure Plan policies UCO7 or ARC 2):

State of Security:

Proposed Utilization:

Basic Bibliography:

Compiled by:

Checked by:

Date:

Revised by:

Checked by:

Date: