

## **ENVIRONMENT AND RESOURCES AUTHORITY REPORT ON EIA**

**PA 01191/05 (GF 00150/06): Construct mixed development which includes a) shopping hall, b) commercial areas and residential units; c) underground parking and service facilities at Old Union Club, Hughes Hallet Street, Tigné Street, Sliema**

**March 2012 (Revised January 2016)**

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### **1. INTRODUCTION**

The then Environment Protection Directorate at the former Malta Environment and Planning Authority (MEPA) requested an Environmental Planning Statement (EPS) to support PA 01191/05 to *construct mixed development which includes a) shopping hall, b) commercial areas and residential units; c) underground parking and service facilities at Old Union Club, Hughes Hallet Street, Tigné Street, Sliema* as per Schedule I, Category II, Section 3.1.2.2.ii, of the former EIA Regulations, 2001. The application is for outline development permission.

The EPS includes a description of the project and its surroundings, relevant legislation and policies, an assessment of impacts and a description of mitigation measures, as required by the Terms of Reference issued by the former MEPA. The EPS was coordinated by Kevin Morris and Rachel Xuereb from ADI Associates Environmental Consultants Limited.

### **2. THE DEVELOPMENT AS ORIGINALLY PROPOSED IN 2007**

The site lies between Triq it-Torri and Ix-Xatt ta' Qui-Si-Sana, in an area known as the former Union Club. The site also borders Triq Tigné and Triq Hughes Hallet and covers an area of 11,631 square metres.

The proposal assessed in the 2007 EPS included excavation of the site to 4 floors (6 floors below Triq Hughes Hallet), construction of 7 blocks (of 2, 4, 6, 8, 10 and 12 floors) and a 32-floor tower (Fig. 4.46 to the Coordinated Report Block Plan in Addendum to the EPS). The 2007 proposal assessed the following with a total gross floor area of 53,854 square metres:

- 242 residential units;
- Open space (6,165 square metres);
- Retail, food and beverage and ancillary use (8,850 square metres);
- Office space (5,730 square metres);
- Car park (800 units) within the basements; and,
- Rehabilitation of Villa Drago and its garden.

The developer revised the building heights of the development proposal following the certification of the EPS. An Update to the certified EPS dated February 2010 was submitted to MEPA as an Addendum. This document assessed the latest changes and proposed mitigation measures, as relevant. The Update included a revised project description together with an assessment of impacts related to visual amenity, shadowing and wind.

The changes to the proposal are illustrated in Figures 1.1 to 1.3 to the 2010 EPS Update and are summarised as follows:

- The Central Tower (T) which was reduced from 32 to 23 storeys;
- Block D, located to the south-east of the principal avenue was raised from 4 to 7 storeys; and
- Block G, located south-west of the principal avenue was raised from 4 to 15 storeys.

The low buildings close to Villa Drago gradually step up to the residential towers in the south-west and south-east corner of the site. The other characteristics of the project were not changed.

In February 2011 MEPA requested clarifications vis-à-vis the air quality chapter, in terms of cumulative impact and air quality estimates including PM<sub>10</sub> emissions. An update to the EIA was submitted in June 2011, focusing on the air quality impacts of the proposed development. The Update was based on methodology that took into account recent air quality legislation, emissions standards and new significance criteria set by MEPA for air quality. Emissions forecasting was carried out using BREEZE Roads model.

### **3. EIA CONSULTATION**

As part of the EIA process, consultation with various consultees was carried out during the scoping stage, the review stage and on the EPS Update. Consultation with the public was carried out during scoping, upon certification of the EPS and on the EPS Update.

#### **3.1 CONSULTATION DURING SCOPING**

During the scoping stage, the Project Description Statement (PDS) was circulated to the following consultees on 24<sup>th</sup> January 2007:

- Sliema Local Council;
- Malta Resources Authority (MRA);
- Din l-Art Ħelwa;
- Superintendence of Cultural Heritage (SCH);
- Civil Protection Department (CPD);
- Department of Public Health;
- Nature Group;
- Kummissjoni Ambjent.

The PDS was also made available for public consultation.

Comments received within the stipulated timeframes were received from the Civil Protection Department, Flimkien għal Ambjent Aħjar (FAA), the Qui-Si-Sana Residents Association, Alternattiva Demokratika and from the public. These are included in Appendix 1 to this Report.

#### **3.2 CONSULTATION DURING REVIEW**

The first draft of the EPS was submitted to MEPA on 28 June 2007 and circulated for review to the following consultees:

- Sliema Local Council;
- Malta Resources Authority (MRA);
- Din l-Art Ħelwa;
- Superintendence of Cultural Heritage (SCH);
- Civil Protection Department (CPD);
- Department of Public Health;
- Nature Group.

The EPS was also circulated for internal review within MEPA.

Within the stipulated consultation period, comments were received from the Sliema Local Council, the former Department of Public Health, the MRA and the Qui-Si-Sana Residents Association. Comments made by MEPA and its consultees during the review stage were forwarded to the EIA Coordinator, the developer and the architect on 6 August 2007. These comments were addressed by the EIA Coordinator and responses were submitted to MEPA, all of which are included in an Addendum to the EPS.

Comments received during this consultation period are included in Appendix 2 to this Report.

### **3.3 CONSULTATION FOLLOWING CERTIFICATION**

The certified EPS was published for public consultation on 7<sup>th</sup> September 2007. The deadline for submissions was 28<sup>th</sup> September 2007; however this period was extended upon the request of the Qui-Si-Sana Residents Association. Within the stipulated consultation period, comments were received from the Tigné and Qui-Si-Sana Residents Association, the Hallet Court Owners Association, the San Roque Owners Association and FAA.

A summary of the comments received during this consultation period are included in Appendix 3 to this Report. Responses by the EIA Coordinator are also included in an Addendum to the EPS.

### **3.4 CONSULTATION ON THE 2010 EPS UPDATE**

An EPS Update was referred to MEPA's Environment Protection Directorate on 26 January 2010 as an Addendum to the certified EPS. A hard copy of the document was delivered to the Sliema Local Council on 23 February 2010. The Update was made available for consultation to MEPA's consultees and the public for 30 days starting from 5 March 2010.

This report focused on the effects of the buildings on the wind climate of the area, shadowing and the impacts of the proposal on the landscape and visual amenity.

The area of influence for the wind and shadow studies was restricted to the areas affected by the proposal i.e. the application site and the abutting land uses and streets. The same Zone of Visual Influence (ZVI) used for the EPS prepared in 2007 was adopted.

The report was made available for comments to the following consultees:

- Sliema Local Council;
- Department of Civil Protection (CPD);
- Malta Resources Authority (MRA);
- Department of Environmental Health (DEH);
- Superintendent for Cultural Heritage (SCH);
- NGOs (Din l-Art Ħelwa, Flimkien għal Ambjent Aħjar, Żminijietna, Moviment Graffiti).

Consultation was also undertaken with the Hughes Hallet Court and San Roque Owners Association and the Tigné and Qui-si-sana Residents Association.

Within the stipulated deadline, comments were received from the Department for Environmental Health, the Malta Resources Authority, Żminijietna and members of the public. These comments were reviewed by MEPA.

Comments made by MEPA and its consultees during the review stage were forwarded to the EIA Coordinator, the applicants and the architect on 17 April 2010. These comments were addressed by the EIA Coordinator and responses were submitted to MEPA.

A summary of the comments received during this consultation period are included in Appendix 4 to this Report. Responses from the EIA Coordinator are also included in an Addendum to the EPS.

### **3.5 CONSULTATION ON THE 2011 EPS UPDATE**

In February 2011, MEPA requested clarifications vis-à-vis the air quality chapter of the EPS, in terms of cumulative impact and air quality estimates including PM<sub>10</sub> emissions. An EPS Update was referred to MEPA's Environment Protection Directorate on 20<sup>th</sup> April 2011 as an update to the Air Quality chapter of the certified EPS. A hard copy of the document was delivered to the Sliema Local Council on 25<sup>th</sup> April 2011. The update was made available for consultation to MEPA's consultees, and other stakeholders including the Sliema Local Council, NGOs and residents' associations, and the general public, while adverts were published in the press and on the MEPA website. The consultation period was 30 days, starting from 1<sup>st</sup> May 2011.

Within the stipulated deadline, comments were received from the Civil Protection Department, the Environmental Health Directorate, Flimkien għal Ambjent Aħjar (FAA) and the Sliema Residents Association. A reply from the Water Resources Directorate for the Malta Resources Authority (MRA) was received outside the consultation period and taken note of.

Comments made by MEPA and its consultees during the review stage were forwarded to the EIA Coordinator, the applicants and the architect on 2<sup>nd</sup> June 2011. These comments were addressed by the EIA Coordinator and responses were submitted to MEPA; these are included in Appendix 5 of this report.

Following meetings between the EIA Coordinator and MEPA, further clarifications vis-à-vis air quality were requested by the Environment Protection Directorate, and air quality terms of reference (including significance criteria) were provided to the EIA Coordinator on 24<sup>th</sup> June 2011 and 11<sup>th</sup> July respectively. The Addendum to the EPS Update was accepted in 23<sup>rd</sup> January 2012. A hard copy of the document was delivered to the Sliema Local Council on 24<sup>th</sup> January 2012. This Update was made available for consultation to the general public, while adverts were published in the press and on the MEPA website. The consultation period was 21 days starting from 29<sup>th</sup> January 2012. No comments were received during this consultation period.

### **3.6 CONSULTATION ON THE 2015 EPS UPDATE**

Following the submission of two EIA screening notes by the EIA Coordinator in September 2014 and September 2015 respectively, MEPA requested the EIA Coordinator to submit a comprehensive EIA Addendum including the following:

- (1) Environmental Planning Statement Public Consultation Comments dated October 2007;
- (2) Update to the EPS prepared in February 2010;
- (3) Update to the EPS finalised in April 2011;
- (4) Addendum to the EPS finalised in 2012;
- (5) EIA screening letter dated August 2014;
- (6) EIA statement dated September 2015.

Upon submission, MEPA issued the document for a 21-day public consultation phase, commencing on 16<sup>th</sup> November to 7<sup>th</sup> December 2015, with comments received from the following entities: Transport Malta (email dated 18<sup>th</sup> November 2015), Environmental Health Directorate (email dated 3<sup>rd</sup> December 2015), Flimkien għall-Ambjent Aħjar (email dated 7<sup>th</sup> December 2015), Żminijietna (email dated 7<sup>th</sup> December 2015), Din l-Art Ħelwa (email dated 7<sup>th</sup> December 2015) and the Regulator for Energy and Water Services (email dated 21<sup>st</sup> December 2015).

A summary of the comments received during this consultation period are included in Appendix 6 to this Report. Responses from the EIA Coordinator are also included in an Addendum to the EPS.

#### **4. THE SITE AND SURROUNDINGS, ASSESSMENT OF IMPACTS AND PROPOSED MITIGATION MEASURES**

The following characteristics of the site, assessment of impacts and proposed mitigation measures were identified in the EPS (Table 13.2 of the EPS):

##### **4.1 LAND COVER AND LAND USE**

The site is situated in the Sliema primary town centre. The land uses, identified in Figure 4.8 of the EPS consist of:

- Predominantly residential (apartment blocks and townhouses) and retail including food and beverage outlets;
- Hotels;
- Qui-Si-Sana promenade and rocky coast;
- Public garden;
- Public car parks;
- Construction works being carried out for the MIDI project and Fort Cambridge; and
- Il-Fortizza (Sliema Point Battery), a Grade 1 building scheduled under Govt Notice 700/95, and other scheduled property.

##### **4.2 GEO-ENVIRONMENTAL RESOURCES**

###### Geology

The study area consists of Lower Globigerina Limestone and phosphate conglomerate bed. No Quaternary deposits were visible in the application site. The strata at the application site are generally massive bedded; their dip is generally near horizontal. Rock strata inside the site indicate the presence of a fault orientated NW-SE and having a throw of the order of a few metres. No clay or other impermeable beds were identified in the subsurface down to the depth investigated. No solution features were seen in the subsurface down to the depth investigated.

###### Geomorphology

With the exception of some segments of the coastline, most of the geomorphology has been irreversibly modified by substantial removal of rock strata, given that the area is largely built-up. The site lies on an elongated low ridge forming part of the Tigné promontory, the western promontory at the entrance to Marsamxett Harbour. It is bound by the Qui-Si-Sana coastline to the north and the Tigné coastline to the south; it is orientated NE- SW approximately parallel to the main fault trend of the island. The coastline is slightly raised and small caverns have been formed by the hydraulic action of wave breakers on weak rock zones generated by intense jointing associated with minor faults. The best known caves in the area are those known as *Għar id-Dud* and *Għar il-Lembi*, which lie outside the Area of Influence of the proposed development.

### Hydrology and Hydrogeology

The area is mostly developed and no surface hydrological features like watercourses, wells, channels etc., exist. The hydrogeological and hydrological features close to the application site are:

- The mean sea level aquifer;
- Sliema coastline; and
- Catchment of the site.

The mean sea level aquifer is circa 7 to 17 metres below ground level. No substantial freshwater aquifer is expected to develop given that the site is close to the sea and is largely built up. The runoff that would be generated from the site should the proposal be built is 1,919 cubic metres.

### Mineral Resource Assessment

The quality of the stone material on site was assessed through visual assessment and logging of rock cores recovered from site investigation, and through visual examination of equivalent rocks exposed in cuttings in Qui-Si-Sana and along the Sliema front and laboratory testing. Test results showed that the material is of poor quality and cannot readily be used.

### Scanline Survey

A scanline survey was undertaken to examine the possible occurrence of potentially unstable rock wedges or slabs in the margin of the proposed excavations. A scanline is a line set on the surface of the rock mass and the survey consists of recording the information about the discontinuities that intersect this line. The line, in this case, is represented by the coastline at Qui-Si-Sana which affords a very good exposure of the fractures running close to or within the site.

A large number of fissures and minor faults were observed along the coastline. Frequently, these are open a few millimetres and are filled with *terra rossa* or a red indurated clay or stain. None show any signs of recent movement; fissures are mostly planar in nature and extend beyond the exposure where they were mapped. The average spacing is 1 metre. A fault crosses the application site.

### **IMPACTS ON THE GEO-ENVIRONMENT**

The following impacts were identified in the EPS:

- *Removal of Globigerina Limestone beds containing important palaeontological features:* No features of special palaeontological importance were identified on site, therefore the impact is estimated to be *not significant to major*, depending on new discoveries;
- *Production of mineral waste:* About 109,215 cubic metres of excavation material will be removed from the site. The impact is *not significant* as the material is of poor quality and no valuable reserves will be depleted. The amount of excavation waste that would need to be disposed of at a licensed inert landfill comprises about 7.7 per cent of the national annual inert arisings. This impact is considered to be of *major significance*.
- *Potential earth movement along the walls of the excavation:* the scanline survey indicated such a potential, however impact is *uncertain* given that at this point it is impossible to ascertain whether there would be any collapses due to the lack of a Construction Management Plan (CMP).
- *Pollution of the mean sea level aquifer:* Projected floor level is 2-3m above Mean Sea Level given that there is no appreciable aquifer, the impact is judged as *not significant*. However, added caution should be applied to ensure that no polluted effluent reaches the sea.

- *Pollution of run-off*: During excavation, rainwater would be channeled to silt traps and routed to a sump. Overspills would be disposed of as directed by the Competent Authority. Refuelling on site would take place in designated bunded and concreted areas and in accordance with best practice, to prevent any spillages into the ground. Any fuel storage area will be bunded to 110% of the fuel storage vessel capacity to contain any spills. During the operational phase of the project, 1368 cubic metres storage for rainwater is to be provided. *No significant impacts* on the aquifer are expected during both construction and operational phases of the proposal.

#### **PROPOSED MITIGATION MEASURES**

- Soil to be removed when dry and stored in a specially dedicated area on site for use in landscaping;
- Re-use of excavated material on-site or off-site, where possible;
- Reporting of the discovery of important geological finds to heritage authorities;
- Scanline survey undertaken at the commencement of excavations and progressively thereafter;
- Good site management during excavation, and appropriate actions to prevent/avoid earth movements; such actions to be addressed in the CMP and reviewed by a geotechnical engineer;
- Provision of mobile toilets connected to the sewer;
- Leak-proof waste deposit containers;
- Any oils or other fuels retained on the site should be stored in leak proof and adequately bunded containers;
- The formulation of a Construction Management Plan and Environmental Management Plan;
- All servicing of vehicles and machinery is to be carried out off-site.
- No effluent is to be allowed to run off the site;
- All run-off from the site must be directed to a waterproof sediment trap from where it is to be pumped out and disposed of as directed by the competent authorities; and,
- No runoff is to be allowed to enter the site from the surrounding streets, through appropriate bunding.

#### **RESIDUAL IMPACTS**

The above mitigation measures are expected to mitigate most of the impacts identified; however the production of mineral waste is considered to be of *major to minor significance* depending on whether the material can be reused. Collapse due to excavation and the discovery of important geological finds is considered as *uncertain*.

### **4.3 CULTURAL HERITAGE**

The cultural heritage features on this site include Villa Drago and its grounds, scheduled as a Grade I monument through Government Notice 730/05.

Villa Drago was a summerhouse with extensive gardens built by Marquis Casimiro Drago V (circa 1881). It was originally built on a corner site with the principal pedestrian egress onto a road within the Villa Drago curtilage that connected *Triq it-Torri* to Qui-si-Sana Place (*Ix-Xatt ta' Qui-Si-Sana*). This road later became a driveway within the grounds of the Villa. The alley connecting Villa Drago with Qui-si-Sana is probably a remnant of that road. Some of the features, as in the case of fenestration and decorative details, of the Villa are notable. The sunken garden with its elevated pathway is a feature of interest.

This Villa has architectural value and is an example of early development in the Sliema area. The garden also has value as an open urban space and due to the large trees present in the grounds which themselves merit protection. Villa Drago was used as a residence until 1974.

#### IMPACTS ON CULTURAL HERITAGE

The following impacts were identified in the EPS:

- *Loss of and damage to features:* As part of the proposal, Villa Drago will be restored. Accretions added over the years will be removed. Since no features will be lost or damaged, the impact is *not significant*. The restoration of the façades and the interior of the villa, and the carrying out of structural repairs are of *major beneficial significance*;
- *Alteration of context:* Three new buildings are proposed at a minimum of 8.8 metres from the façade of the Villa. The heights of the buildings immediately adjacent to Villa Drago are less than the surrounding existing buildings. The effect on the setting of Villa Drago and the alteration of context is judged to be *not significant*. The refurbishment of the gardens for the enjoyment of the public will be of *minor beneficial significance*.

#### PROPOSED MITIGATION MEASURES

Measures to protect Villa Drago are to be implemented. Trenching to at least 1m below the foundation level of Villa Drago or the new building, whichever is lower, is proposed to prevent transmission of vibrations.

#### RESIDUAL IMPACTS

No residual impacts are expected.

#### 4.4 NOISE EMISSIONS AND VIBRATION

Background noise levels were measured at three noise monitoring points located at *Triq it-Torri*, in the middle of the site and on the eastern part of the proposed development site. The background noise levels range between 45 - 62 dB(A) (LA90) during daylight hours, and 41 - 51dB(A) (LA<sub>90</sub>) at night time. Predominant noise sources were traffic and construction activities. Noise sensitive receptors identified were the residents of dwellings overlooking the site, the Union Club users, office workers at *Triq it-Torri*, and pedestrians.

With respect to vibrations, measurements were not undertaken for this assessment, however in the absence of construction activities on the site, ambient vibration levels were estimated to be typical for an urban location.

#### IMPACTS ON NOISE AND VIBRATIONS

The following are the predicted impacts identified in the EPS:

- *Noise levels from construction activities:* Noise from excavation and construction activities is likely to span throughout a construction period of 54 months. The most noticeable will result from excavation; such noise being limited to working hours and for the most part not continuous, and spanning over a period of 12 months.

##### Impacts at each of the noise assessment points

At the noise assessment points described in Figure 9.3 of the EPS, LA<sub>eq</sub> sound levels from the combined operation of the plant are predicted to be between 85dB(A) and 96dB(A) during the excavation phase, and 75dB(A) and 87dB(A) during construction. Since noise climate indoors with windows closed is expected to be reduced by at least 28dB(A) by walls and window panes, the resulting indoor working hours noise climate during construction is calculated to range from 48dB(A) to 59dB(A) and 57dB(A) to

68dB(A) for the majority of the excavation phase. The change in the indoor noise climate during excavation and construction at each of the noise-sensitive receptors with the exception of Assessment Point 1 during construction, taking account of the attenuation deriving from walls / glass is in excess of 10dB(A) and is, therefore, judged to be of *major significance*. The change in the outdoor / window open noise climate during excavation and construction is considerably greater (with the exception of Assessment Point 1) during construction, and is also judged to be of *major significance*. However, as a result of the attenuation resulting from the screening effect afforded by the buildings surrounding the application site, the changes in noise climate over most of the area beyond the immediate vicinity of the application site boundary is likely to be *not significant*.

- *Noise levels during the operational phase:* Noise likely to be generated during operation would depend on the mix of activities; however such information was not available. On the other hand, noise resulting from increased traffic was predicted based on the traffic flows and patterns described in the Traffic Impact Statement (TIS). Traffic flows resulting from the growth in network traffic were estimated to increase from 1,868 vehicles in the afternoon peak hour, to 2,369 in 2017. Since a doubling of traffic flows is required to effect a 3dB(A) change in background noise levels, in the EPS the additional traffic is estimated to be unlikely to result in a substantial increase in background noise levels on *Ix-Xatt ta' Qui-Si-Sana*. Additional noise resulting from increased traffic is judged as *not likely to be significant*.
- *Impacts of vibrations on the structural integrity of surrounding buildings and structures:* Excavation, new foundation work, and increased construction traffic are sources of vibrations that can affect adjacent structures. The effect of vibrations, according to the EPS, would be considerably reduced if a trench that is at least 2 metres wide and slightly deeper than the lowest excavation point is dug between the source of vibration and the sensitive receptor. In this regard, the impact of vibrations on the stability of the buildings surrounding the application site and Villa Drago is estimated as likely to be *minor to not significant*.
- *Impacts of vibrations on people in adjacent buildings:* Impact of vibrations on residents depends on the distance of the source of vibration from the receptor. Table 9.2 of the EPS shows that at a distance of 20 metres between the sensitive receptor and the excavation equipment, vibration is just perceptible. For excavation taking place at the periphery of the site, which is within 20 metres of sensitive receptors, vibration would be perceptible and in some cases, disturbing. The impact is judged to be of *major significance*, albeit for a short period. At other times the impact of vibration on residents is judged as *not likely to be significant*. The worst affected would be those residents adjacent to the scheme on *Triq Hughes Hallet*, *Triq Tigné*, and *Ix-Xatt ta' Qui-Si-Sana*. The impact of excavations that take place at the centre of the site is judged *not be significant* because the site area is large and distances from the centre to the nearest receptors are greater than 27 metres.

#### **PROPOSED MITIGATION MEASURES**

- Placement of an 8-course *franka*-stone wall around the perimeter of the application site is not likely to materially mitigate noise levels;
- Vibration monitoring programme throughout the excavation phase;
- Assessment of structural stability of surrounding buildings prior to the commencement of works;
- Detailed method statement prepared by a qualified geotechnical engineer detailing the manner in which instability risks will be minimised during excavation and construction, prepared as part of the Construction Management Plan;
- Excavation undertaken with a trencher and ripper;
- Excavation of trench deeper than the excavation itself around site periphery.

## RESIDUAL IMPACTS

It is anticipated that noise arising from excavation activities would extend over the duration of the excavation. Such residual impacts would be of *major significance*.

### 4.5 EMISSIONS TO AIR

The baseline survey was based on a desk-top study through the use of the DETR model for the estimation of air quality indicators. The model provides worst case estimates for NO<sub>x</sub> and PM<sub>10</sub>. Concentration of NO<sub>x</sub> and PM<sub>10</sub> estimates arising from traffic on Ix-Xatt ta' Qui-si-Sana were 3.08 and 106.6µg/m<sup>3</sup>, respectively.

#### IMPACTS ON AIR QUALITY

The following impacts were predicted in the EPS:

- *Impact of dust emissions on sensitive receptors during construction (including excavation):* Main emissions likely to be dust and other particulate matter generated during excavation or from handling of construction materials. This may result in visual and health effects. With the proposed excavation methods (trencher, ripper, pneumatic hammer and shovels) PM<sub>10</sub> generation would be less than that from a soft stone quarry. Dust generated is deposited within 100m of the site, within which no high sensitive receptors such as hospitals or schools are present. Emissions from construction vehicles and equipment were estimated to be negligible compared to traffic emissions in the area. Dust may be a short-term nuisance for residents abutting the application site, however in the EPS the impact is expected to be of *minor significance*.
- *Impact of emission from vehicles on sensitive receptors during operation:* Impact of vehicles entering and leaving the site will contribute to PM<sub>10</sub>, NO<sub>x</sub>, CO, CO<sub>2</sub>, benzene and VOCs. The worst-case scenario of 5 years after commencement of operation (2017) was assessed, compared to the present situation. NO<sub>x</sub> emissions will increase from 132 µg/m<sup>3</sup> to 157 µg/m<sup>3</sup> at peak hours on weekend mornings due to the proposal by 2017. In the EPS the impact is expected to be of *minor significance* given that the Average Hourly Limit value of 200 µg/m<sup>3</sup> (L.N. 224 of 2001) is not exceeded. PM<sub>10</sub> emissions would increase from 108 µg/m<sup>3</sup> to 128 µg/m<sup>3</sup> due to the proposal by 2017. As a result of the proposal, traffic would exacerbate the situation making it more difficult to reduce emissions to below the legislated levels. Even without the proposal, the levels of PM<sub>10</sub> were estimated to be above the hourly limit for protection human health of 50 µg/m<sup>3</sup> (L.N. 224 of 2001) and therefore judged to be of *major significance* in the original EPS of 2007.

#### PROPOSED MITIGATION MEASURES

- Control of dust emissions;
- Wheel washing;
- Maintenance of vehicles and plants;
- No unnecessary running of plants;
- Planning of timing and working methods;
- Communication with residents and the Local Council;
- Measures to reduce private car use.

No suitable direct mitigation measures were identified for the effects of traffic-derived pollutants for this site and specific to the scheme.

## RESIDUAL IMPACTS

The original EPS anticipated that there would be residual impacts during both the construction and operational phases of the scheme. Although the former was expected to be a temporary impact, the latter would be permanent and would endure for as long as the scheme is in operation. The significance of the residual impacts was judged as *major* although the same situation would still result

if the application site were to be developed along traditional lines and network traffic continues to use *Ix-Xatt ta' Qui-Si-Sana* as a main thoroughfare.

#### 2010 EPS UPDATE - ADDENDUM ON AIR QUALITY

The original 2007 EPS indicated a major negative impact on air quality due to operational traffic and proposed that measures to reduce private car use were to be encouraged. The original EPS identified that PM<sub>10</sub> emissions would increase from 108 µg/m<sup>3</sup> to 128 µg/m<sup>3</sup> due to the proposal by 2017. As a result of the proposal, traffic would exacerbate the air quality of the Sliema/Tigné area, making it more difficult to reduce emissions to below the legislated levels. Even without the proposed development, the baseline levels of PM<sub>10</sub> would still be above the hourly limit for protection of human health of 50 µg/m<sup>3</sup> (L.N. 224 of 2001) and were therefore judged to be of *major significance*, given that the EPS stated that there were no suitable mitigation measures for the effects of traffic-derived pollutants specific to the proposal. The increase in PM<sub>10</sub> levels was not considered acceptable in accordance with Article 13(1) on the limit values and alert thresholds for the protection of human health in Directive 2008/50/EC on Ambient Air Quality.

The Environment Protection Directorate had pointed out that proposed mitigation measures should be ambitious enough to effectively cancel out all traffic emissions estimated by the EIA and therefore remain at baseline levels. In reaction to this, the applicant had proposed a park-and-ride location scheme based in the car park of Zammit Clapp Hospital. However, this proposal had not yet been studied through the EIA process and in the absence of such assessment it could not be assessed whether such a proposal would tangibly improve the air quality emissions in the area.

In light of the above air quality concerns, the studies were updated in 2011 through an Addendum to the EIA, focusing on the air quality impacts of the proposed development. The Update was based on methodology that took into account recent air quality legislation, emissions standards and new significance criteria set by MEPA for air quality. Emissions forecasting was carried out using the BREEZE Roads model.

The EPS Update Addendum provided the following results:

(1) The TIS (undertaken in 2007) forecast the traffic in 2012 with and without the proposed development, and used the 2012 forecast to estimate the traffic flows in 2017. The surveys undertaken for this study showed that the traffic flows forecast for 2012 would not materialise, and the study concludes that the forecasts for 2017 are therefore also likely to be over-estimated. The 2007 TIS estimates for 2012 and 2017 (using the factor of 0.0691) are 21,527 and 23,386 without the proposed development; the actual flows are 10,134 and based on these flows the traffic flows in 2017 without the development are estimated to be 15,471. The traffic generated by the proposal in 2017 as estimated in the TIS is 4,240 vehicles, and this does not change. The 2017 emissions that would result from the revised (lower) traffic baseline are presented in the tables in the Addendum to the EPS. The results of all scenarios show that the impact from the proposed development traffic on NO<sub>2</sub> and PM<sub>10</sub> emissions using the significance criteria provided by MEPA is negligible;

(2) With respect to cumulative impacts, although the PM<sub>10</sub> limit values as in Legal Notice 478 of 2010 are exceeded, the PM<sub>10</sub> annual average (45.5µg/m<sup>3</sup>) falls within the margins of tolerance as in Schedule 7 (48µg/m<sup>3</sup>) of the Legal Notice. Moreover, given that the AADT along *Triq Qui-si-Sana* was 10,134 vehicles, the high level of PM<sub>10</sub> cannot be solely attributed to traffic. This is also acknowledged in other EIAs carried out for developments in the area (for example the EIA for Fort Cambridge) where high recorded baseline PM<sub>10</sub> levels were attributed to non-traffic sources. MEPA's State of the Environment Reports have for a number of years

reported on the various sources, other than traffic, that influence the level of PM<sub>10</sub>. Such sources include sea spray, wind blown dust, dust directly emitted from quarrying, mechanically generated dust (e.g. from construction activities), marine traffic, tyre and brake abrasion, and fireworks.

In light of the above, the EPS Update Addendum states that the results show that the impact of the proposed development on air quality on *Triq Qui-Si-Sana* is estimated to be negligible. Both PM<sub>10</sub> levels and NO<sub>2</sub> levels were estimated to be within the required national and EU standards.

#### **4.6 BUILDING PERFORMANCE: WIND, SHADOW AND VISUAL AMENITY**

##### **4.6.1 WIND STUDY**

The wind study assessment was revised in the 2010 EPS Update. A qualitative analysis was undertaken to estimate the pedestrian wind conditions at 19 locations on and around the proposed development. The worst-case scenario was assessed. The same pedestrian wind comfort criteria used for the 2007 certified EPS were used for the EPS Update. The three typical pedestrian activities are sitting (low wind speeds), standing (slightly higher wind speeds) and walking (winds that lift leaves, move litter, hair and loose clothing). An uncomfortable designation was also proposed, should the criteria for walking not be satisfied. Safety is also considered by the criteria where excessive gust wind speeds can adversely affect a pedestrian's balance and footing.

##### **WIND STUDY: IMPACT SIGNIFICANCE**

The Landmark Tower generates downdraught which reinforces pressurisation of the windward elevation at lower levels. Strong winds have been predicted along the thoroughfare through the arch of the tower, considered suitable for leisure and business walking during the windiest season (Location 18). The Addendum proposes mitigation to enhance the wind microclimate in the areas adjacent to the tower and provide shelter to pedestrians accessing the square from *Triq Hughes Hallet*. This includes the windier than desired conditions expected through the underpass of the tall building attached to the tower towards the south.

The EPS Update remarks that there are areas to the east and west elevations of the Landmark Tower which are suitable for leisure walking. However, leisure walking conditions considerations are compatible with a pedestrian thoroughfare. If there are entrances in these areas then consideration should be given to mitigation measures such as local planting and/or architectural screening to provide additional shelter to pedestrians. Alternatively entrances should be recessed.

The pedestrian access route which runs through the development, connecting *Triq Tigné* to the sea, is likely to experience the upper limit of leisure walking (i.e. close to achieving a business walking classification) conditions along the full route which the strongest winds expected near the base of the tower at Location 9. The consultants advise to keep the area clear of any amenity spaces where pedestrians are expected to linger for long durations and therefore such space is proposed to be designated as a pedestrian thoroughfare.

The west end of the piazza is less windy than the zone near the Landmark Tower and there are areas which are suitable for standing or sitting even during the windiest season. Planting and/or local screening is recommended within the piazza in areas where sitting conditions are desired throughout the year.

Given the above, wind conditions suitable for business walking only has been predicted for two locations within the proposed development:

- Location 9: This location is likely to be windiest on the west side of the tower and is at the upper limit of leisure walking and close to achieving a business walking classification.
- Location 18: This location is situated underneath the tall building that is attached to the Landmark Tower, aligned towards the south and designed with a pedestrian thoroughfare underneath. This location is likely to experience conditions suitable for business walking in the worst case.

No significant changes are expected to third party property. Likely impacts are expected to be *of minor significance* with scope for mitigation measures.

#### **WIND STUDY: MITIGATION MEASURES**

The following mitigation measures were proposed in the EPS Update:

- Effective use of planting within the garden areas intended for the lower piazza level on the west side to provide suitable sitting conditions throughout the year.
- Keeping the area at the base of the tower, near Location 9, clear of any outdoor amenity spaces since this location is likely to be the windiest. Use of planting and local canopies on the entrances of the retail units below the tower and within the outdoor amenity spaces in the piazza to provide shelter to pedestrians enjoying the open space.
- Vertical screening to increase resistance to flow through the underpass at pedestrian level at Location 18.

#### **4.6.2 SHADOW**

The shadow baseline was drawn for the summer and winter solstice for one hour after sunrise, for midday and for one hour before sunset. In accordance with best practice the shadows were also determined for one month on either side of the solstices: 21 May and 21 July, and 21 November and 21 January. Two scenarios were modelled: the scheme (updated) and the development of the site along traditional lines with 100% site coverage and building heights to 7 storeys plus penthouses. The assessment describes and compares the shadow effects of the two.

The shadow study presented in the certified EPS was revised and presented in the EPS Update (2010). Shadows were categorised as follows:

- Shadowing of public open spaces close to the application site;
- Shadowing of third party property dwellings and / or private open spaces; and
- Shadowing of open spaces within the application site.

Extent of shadowing is illustrated in Figures 2.3 to 2.15 in the EPS Update.

#### **SHADOW: IMPACT SIGNIFICANCE AND MITIGATION MEASURES**

In view of the transient nature of shadowing, no single location is subjected to shadow throughout the day, and the loss of direct sunshine is considered as both a benefit and disbenefit, depending on the season.

The shadow diagrams, illustrated in the EPS Update, show that the public open spaces along *Ix-Xatt ta' Qui-Si-Sana* including the rocky foreshore, are impacted by shadows from the buildings along the seafront. The proposal will extend this impact further over the sea and will also impact additional areas of the rocky shore at noon insofar as there will no longer be patches of sunshine. The

illustrations in the EPS Update show that the shadows on the open space at the junction of *Triq it-Torri* and *Triq il-Kbira* will not intensify as a result of the proposed development.

The worst-case shadowing occurs in both the winter and summer seasons 1 hour after sunrise, when shadow from the tower is expected to extend slightly the shaded area over dwellings to the southwest of the application site. Shadows cast at noon by the traditional development or the proposal marginally affect Sliema Town Square Phase I apartments. The shadows cast by the towers one hour before sunset are similar in impact on the surrounding buildings as that caused by traditional housing. Since the proposal is not expected to exacerbate shadowing on public open spaces, and since the impact in nearby dwellings is marginal, the impact of shadowing is *not expected to be significant*. Given this, there is no scope for mitigation.

#### **4.6.3 VISUAL AMENITY**

The visual amenity assessment assessed the effect of the proposed development on the amenity of sensitive receptors (i.e. those experiencing views of the proposal), relating the actual or perceived visible changes to the character and quality of the views.

The visual amenity assessment presented in the certified EPS was revised and presented in the EIA Addendum. The zone of visual influence (ZVI) for the proposed development was defined using a combination of desk and field-based techniques. A total of 11 viewpoints, which consisted of base photos and photomontages, were re-assessed with the revised proposal:

- Viewpoint 1: Near Preluna Hotel
- Viewpoint 2: Manoel Island
- Viewpoint 3: Valletta ferry landing
- Viewpoint 4: Smart City
- Viewpoint 5: Bighi
- Viewpoint 6: Vittoriosa
- Viewpoint 7: Triq Garibaldi, Marsa/Luqa
- Viewpoint 8: University of Malta, Msida
- Viewpoint 9: Mdina Bastions
- Viewpoint 10: Triq it-Torri
- Viewpoint 11: Is-Sur ta' l-Ingliži, il-Belt Valletta

#### **VISUAL AMENITY: IMPACT SIGNIFICANCE AND MITIGATION MEASURES**

The impact of the proposal on the visual amenity of the viewpoints assessed is largely of *major to minor significance*. In the EPS, major significant impacts were identified from the following viewpoints:

- Viewpoint 1: near Preluna Hotel; and
- Viewpoint 10: Triq it-Torri.

The EPS Addendum of 2010 remarked that it is difficult to mitigate the effects of the proposal on the visual amenity to any greater extent than the measures already incorporated into the design of the proposal, which design evolved throughout the EIA process and discussions with MEPA's Planning Directorate. Residual impacts are the same as the unmitigated impacts, namely with Viewpoints 1 and 10 identified as being of *major significance*.

#### **RESIDUAL IMPACTS**

The residual impacts would be the same as the unmitigated impacts.

***Environment and Resources Authority note: The EPD is of the opinion that major impacts on visual amenity would also result from Manoel Island and the Valletta Landing Ferry.***

#### **4.7 SOCIAL ASSESSMENT**

The EPS identified the following sociospheres in the area of study (Figure 12.1 of the EPS):

- Well-established residents or aging community;
- Permanent Maltese residents;
- Foreign residents;
- The 'working community' (business owners and workers);
- Tourists;
- Visitors to residents;
- Visitors to the locality for leisure purposes, including sports and recreational activities, members of local clubs and associations, restaurant patrons, etc;
- Night-life visitors, including restaurants and other amenities.

##### **RELATIONSHIP TO THE LOCALITY - VALUES AND LIFESTYLES**

According to the EPS, the locality was perceived by residents as having been a quiet residential community which has experienced significant cumulative changes over the past 15 years. According to the interviewees, the main changes included lack of parking facilities and increased traffic circulation, noise and dust pollution, displacement of residents, increase in population, and visual/light impacts.

##### **PERCEIVED IMPACTS ON LIFESTYLE AND SOCIAL ACTIVITIES**

The EPS describes the perceived impacts of the proposal on different sociospheres during both the construction and operational phases. During the construction phase, the perceived impacts included health related issues, displacement, increase in cost of living, lack of enforcement, safety issues, structural damage to property, lack of parking and traffic circulation/congestion, overshadowing and visual impact, noise pollution, decrease in recreational and social amenity. During the implementation/operational phase, the perceived impacts included a congested social environment, oversupply of apartments in the area, change in social character of the locality, traffic congestion and parking problems, further stress on the infrastructure, visual impact and physical overshadowing, privacy and noise/ light pollution, and issues of safety. The perceived positive impacts included the embellishment of the area, high construction standards, and upgrades in infrastructure.

The EPS notes that the general attitude of interviewees towards the proposed development was negative; the general feeling was that a sizable development within the area was not required, particularly in view of the fact that another two high buildings are being built at present. Most people were also worried about physical and social overshadowing. Almost all the sociospheres described the perceived impacts as being an aggravated version of what they already experience in the area due to the other construction developments in the vicinity..

##### **SOCIAL IMPACT OF LIVING IN A HIGH-RISE**

The EPS considers the impacts of the proposed development on people living in or visiting the surrounding area, and on future residents. This section was based on the experience of two consultants and describes issues related to design, management schemes, security and safety, refuse disposal, social interaction and privacy, common facilities, ancillary facilities and services and social overshadowing.

**Environment and Resources Authority note: Malta's National Environment Policy (2012) states that a "cautious approach" should be taken with regard to permits for tall buildings until a planning policy on high rise comes into force.**

The social impacts identified in the EPS include:

- Loss of refuge and privacy: *Minor to major adverse* (construction and operation);
- Overcrowding of leisure space: *Not significant to minor adverse* (operation);
- Traffic congestion: *Minor to major adverse* (construction and operation);
- Parking: *Minor beneficial* (operation);
- Increased noise and air pollution: *Major adverse* (construction).
- Potential two-tiered community: *Minor adverse* (operation);
- Increase in activity around the site: *Minor beneficial* (operation).

#### **MITIGATION MEASURES**

Proposed mitigation measures for social impacts refer to other chapters of the EPS and include the management of construction including dust, air and noise pollution mitigation measures, and proper traffic management.

#### **RESIDUAL IMPACTS**

The EPS notes that the majority of social impacts described above only apply to the construction period. The operational residual impacts relate to the decline of sociospheres that perceive that privacy/ refuge will be adversely affected.

**Environment and Resources Authority note: The social impacts as listed in the EPS do not only apply to the construction period, but also to the operational phase.**

#### **4.8 WASTE MANAGEMENT**

The proposal will result in a quantity of waste produced during demolition of existing structures, excavation, construction of the scheme and operation. The waste to be generated by the proposal falls into the following categories:

- Waste resulting from the demolition of the former Union Club site;
- Excavation waste;
- Building material from Villa Drago;
- Runoff (during excavation and construction) from site likely to contain sediments;
- Foul water from ablution facilities (for site workers); and
- Operational waste.

The following quantities of waste shall be produced:

- Demolition waste: 300 cubic metres;
- Excavation waste: 109,215 cubic metres;
- Mixed building materials: less than 100 cubic metres;
- Municipal solid waste: 1,015 kg daily;
- Other (packaging waste, waste fluorescent tubes, refrigerants).

Inert waste shall be deposited in a licensed landfill. Municipal solid waste will be collected and deposited at the landfill or at a composting facility. Other wastes shall be disposed of as directed by the competent authority.

#### **4.9 UTILITIES**

### Water

The daily water consumption of the proposal in full operation is estimated to be approximately 147 cubic metres per day. WSC confirmed that it would be possible to connect to the mains piping network on *Triq it-Torri*, *Triq Tigné* and *Triq Hughes Hallett*.

### Sewage

The proposal's peak effluent discharge is 0.58% of the existing gallery's capacity. The EPS indicates that this is sufficient.

### Energy

Power requirements for this proposal are estimated at 5,000kVA. The residential component will consume an average of 3.21MWh at full occupancy, whereas the commercial component is expected to consume 4830kWh per day assuming all commercial outlets are fully occupied. This is equivalent to 4.5 GWh p.a. An additional facility with two 1,600kVA transformers is necessary.

## **5. ENVIRONMENT AND RESOURCES AUTHORITY COMMENTS AND CONCLUSIONS**

The EPS<sup>1</sup> has predicted a number of potential impacts on the environment as a result of the proposed development, some of which are of major significance. The mitigation measures proposed in the EPS are aimed at minimising the predicted impacts, however despite the mitigation measures, the following uncertain and *major negative* residual impacts were identified in the EPS:

- Production of mineral waste (*major*);
- Removal of Coralline Limestone beds containing important palaeontological features (*uncertain*);
- Collapse of excavation (*uncertain*);
- Impact of vehicle emissions on residents (*major*) – this impact was subsequently revised to *negligible* in the EPS Update Addendum
- Noise impact on sensitive receptors (*major*);
- Impact of vibrations on the structural integrity of surrounding buildings (*uncertain*);
- Impacts on operational noise on residents (*uncertain*);
- Viewpoint 1 (near Preluna) and Viewpoint 10 (*Triq it-Torri*) (*major*);
- Various social impacts (*minor to major*).

The Environment and Resources Authority adds the following comments:

### **5.1 NOISE**

The EPS indicates that noise during excavation and construction will result in a *major impact* both with open and closed windows. The EPS indicates that measures to reduce noise impacts during the construction phase include keeping the windows shut, a mitigation measure which the Environment and Resources Authority does not consider to be reasonable. Although the EPS identifies this as a short term impact (excavation will take 10 months and construction will take 4 years), such impact would be significant given that the proposed development site is surrounded by a densely populated area.

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<sup>1</sup> Unless otherwise indicated, EPS refers to the 2007 version of the Environmental Planning Statement as submitted by the developer to MEPA.

Noise impacts during operation are judged to be *uncertain* in the EPS. The Environment and Resources Authority notes that noise impacts during operation are largely dependent on more precise details which would only be available at Full Development application stage. Conclusive assessment of this issue would only be finalized once such details are submitted.

## **5.2 VISUAL IMPACT**

The EPS indicates that the impact on the visual amenity is *major* when viewed from near the Preluna Hotel and from *Triq it-Torri*. However the Environment Protection Directorate is of the opinion that a *major impact* on visual amenity would also result from the viewpoints of Manoel Island and the Valletta Landing Ferry.

## **5.3 GEO-ENVIRONMENT**

The scanline survey indicated potential collapse of excavation yet the EPS identifies such impact as *uncertain*. At this stage it is not possible to predict the likelihood of such impact i.e. whether there will be collapses in view of the absence of a Construction Management Plan (CMP).

The Environment Protection Directorate notes that impacts associated with the potential collapse of excavation are largely dependent on more precise details which would only be available at Full Development application stage. Conclusive assessment of this issue would be finalized once such details are submitted to MEPA.

## **5.4 ENVIRONMENT AND RESOURCES AUTHORITY CONCLUSIONS ON ORIGINAL PROPOSAL**

The then Environment Protection Directorate drew attention to the fact that Malta's National Environment Policy (2012) stated that a "cautious approach" should be taken with regard to permits for tall buildings until a planning policy on high rise comes into force.

The increasing number of tall buildings and their environmental impact was a matter of concern to the then Environment Protection Directorate.

The former Environment Protection Directorate recommended that visual impact and social impacts are highlighted as major considerations in the evaluation of this proposal.

## **5.5 2014 SUBMISSIONS**

In August 2014, applicant submitted revised plans to MEPA (Minutes 40 and 41 in PA 01191/05), whereby the proposed development comprises the following elements:

- 181 apartments (34,800m<sup>2</sup>, excluding terrace areas);
- 4719m<sup>2</sup> of office space;
- 9105m<sup>2</sup> of retail area;
- 721 parking spaces, which may increase to 800 parking spaces, subject to the final layout of the parking area.

In terms of design, the applicant notes that the design of the proposal is closer to what was originally proposed in 2007, that is, as originally studied in the first draft of the EPS and also reflects the new Floor Area Ratio (FAR) policy. With respect to massing and location, the revised proposal remained unchanged with some minor refinements/amendments in terms of overall design, with the maximum proposed heights being 33 in the central tower.

A note submitted by the EIA Coordinators (ADI Associates) has indicated the following:

- (1) *Geology*: Impacts are to remain unaltered since it is envisaged that the same volume of material would be excavated from the development site.

- (2) *Cultural heritage*: With respect to impacts on the adjacent Villa Drago, the EIA Coordinators note that in terms of impacts associated with the alteration of its context remain not significant, as indicated in the original EPS.
- (3) *Air quality*: The Annual Average Daily Traffic (AADT) from the revised proposal shall be 27,337, which is slightly less than that assessed in 2012, therefore the impact on air quality is expected to remain the same.
- (4) *Wind, visual amenity and shadowing (building performance)*: Impacts are expected to be similar to the impacts identified in the original EPS, given the similar configuration of the proposed buildings. In terms of visual amenity, alteration of the design of the tower and the surrounding buildings, impacts on such may differ. The consultants note that the landscape impacts are likely to remain unchanged.
- (5) *Social assessment*: Impacts are likely to remain unchanged from the revised proposal, because of the similar land-uses and the similarity in building heights with the proposal as originally submitted.

## 5.5 2015 SUBMISSIONS

In addition to the 2014 amendments, further revisions to the proposed development were submitted in September 2015, through the submission of a revised EIA note by the EIA Coordinator. This document indicated that the proposed development had been revised as follows<sup>2</sup>:

- The total number of residence being 163 apartments (i.e. 33,277m<sup>2</sup>, excluding terraces);
- Offices – 4,719m<sup>2</sup>;
- Retail – 8,241m<sup>2</sup>; and
- Parking- 773 (parking provision can potentially be increased to 800 parking spaces as the layout may accommodate 2 and 3 car garages which are currently not included in the design).

This document notes that the number of residences, offices and retail areas has been reduced from the original EPS while the car parking spaces have remained the same. The maximum building height for the central tower reaches up to 36 and 38 storeys.

With respect to the impacts of the proposal, this document identified the following:

- (1) *Geo-environment*: Impacts remain unchanged since the same volume of material is envisaged – waste will be either reused on site or disposed of in an approved quarry.
- (2) *Cultural heritage*: In terms of impacts on Villa Drago, the proposed interventions are not expected to be detrimental to the villa. With respect to the alteration of the context, it is concluded that impact is not significant, as indicated in the original EPS.
- (3) *Air quality*: The AADT for the revised proposal is less than that which was assessed in the 2012 Addendum, and thus the impact on air quality is expected to remain similar (or slightly improve) on that assessed in the EPS Addendum. The proposal as currently proposal shall not affect the findings of the 2012 EPS Addendum and thus impacts remain unchanged.
- (4) *Visual assessment*: A revised visual impact assessment has been carried out and indicated that most of the impacts remained the same as those identified in the original EPS, however the following views have been impacted: VP2 (view from Gzira promenade) now re-assessed as major from minor; VP3 (viewpoint from Valletta) now re-assessed as moderate from minor; and VP 11 (view from is-Sur ta' l-Inglizi) now re-assessed as moderate from minor. Two additional viewpoints were also included in the assessment from Kalkara.
- (5) *Landscape impacts*: These impacts remain unchanged with the revised proposal.
- (6) *Land uses*: Impacts on land use remain unchanged with the revised proposal.

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<sup>2</sup> It is being understood that 2015 revisions are final.

### ***Overall Environment and Resources Authority (ERA) Conclusions***

Whilst having no further comments to add to the revised conclusions by the EIA Coordinator in the EIA note submitted in September 2014 and September 2015, respectively the Environment Protection Directorate (EPD) notes that the comments raised in Sections 6.1 – 6.3 (noise, visual impact and geo-environment) above, are being reiterated.

The Environment Protection Directorate (EPD) would like to point out that issues vis-à-vis building performance, social impacts, safety and risk considerations are beyond the Authority's remit, and should be assessed in detail in the mainstream development process, as relevant.

Therefore, in light of the above, the Environment and Resources Authority's assessment and proposed conditions are without prejudice to any other potentially relevant considerations that may be raised by the Planning Authority or any other interested authority or stakeholder.

## **Appendix 1: Summary of comments submitted to MEPA during scoping consultation**

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### **Department of Civil Protection (01/02/2007)**

- Adherence to fire safety measures, prevention and precaution;
- Provision of adequate access to fire vehicles and personnel.

### **Flimkien għal Ambjent Aħjar (07/03/2007)**

- Study of overshadowing, wind impact, landscape impacts and emissions;
- Integration of Scheduled Villa Drago into the project;
- Overdevelopment of Tigné Peninsula.

### **Qui-Si-Sana Residents Association (15/02/2007)**

- Traffic flows and related air quality;
- Noise impacts;
- Impacts utilities and infrastructure;
- Safety measures in conjunction with the height of the tower.

### **Alternattiva Demokratika (19/03/2007)**

- Study on cumulative impacts;
- Impacts of noise, dust and emissions;
- Increase in VOCs.

### **Comments from the Public (various)**

- Comments as per the Qui-Si-Sana Residents Association;
- Comments on the aesthetics and visual impacts of the proposal;
- Comments on shadowing of the proposal;
- Comments on impacts on Villa Drago;
- Comments on inadequacy of the proposed tower, given the proximity to apartments;

## **Appendix 2: Summary of EPS Review comments submitted to MEPA**

### **Department of Public Health (26/07/2007)**

- Impacts due to noise and vibration complaints and investigation thereof;
- Comments on legislation related to water quality, risk assessment and food safety.

### **MRA (13/07/2007)**

- Request for further information on energy use, energy efficiency measures and temporary/ permanent fuel storage;
- Comments on the reuse of rainwater and greywater.

### **Flimkien għal Ambjent Aħjar (06/08/2007)**

- Demand for the proposal, including comments on residential property;
- Comments on monitoring of emissions;
- Conformity of the proposal to the Structure Plan policies;
- Impacts during operation, especially emissions to air, and construction namely noise and vibrations;
- Impacts of shadows, visual amenity and social impact.

### **Qui-Si-Sana Residents Association (16/08/2007)**

- Objected to the proposal since it contravenes the North Harbour Local Plan;
- Concerns on the height of the tower and flanking buildings, proximity of the tower to the streets, shadowing impacts and issues related to noise, dust and traffic.

### **Sliema Local Council (07/08/2007)**

- High rise building of 32 storeys is too much for this area;
- Objecting to the height of the proposal.

### **Appendix 3: Summary of Comments received following EPS Certification**

#### **Flimkien għal Ambjent Ahjar (08/10/2007)**

- Emissions and traffic flow emissions;
- Population decline and slow down of real estate market;
- Shadowing effects;
- Traffic Impact Statement related comments;
- Air emissions generated by dust and traffic.

#### **Tigné and Qui-Si-Sana Residents Association (03/10/2007)**

Presented a detailed report on the EPS and Traffic Impact Statement (TIS). The main points raised were:

- Lack of justification given oversupply, making project unnecessary;
- The visual impact of the project on the surrounding areas is down played throughout the entire EPS. The viewpoints chosen for preparing photomontages and as submitted in the EPS deceive the massive visual impact that the proposed project will create;
- Alien development: The proposed development does not blend with the surrounding area and will further damage the historical and landscape components especially since the proposed project is earmarked to occupy the space of the former Union Club building. Impact on Valetta;
- Nuisances will be incurred by the Tigné Residents. The EPS hardly presents any mitigation measures; and
- The current traffic situation on the Tigné peninsula is already problematic. This will be made even worse with the MIDI Tigné Point Development as well as the proposed development of Fort Cambridge and the present proposal.

#### **Hallet Court Owners Association (28/09/2007)**

- The Scheme is not in conformity with the North Harbours Local Plan in respect of height;
- The Application Site is designated in the Local Plan for hotel development;
- The Scheme must conform to NHH01 and the FAR policy;
- The proposed tower is close to abutting development;
- Photos have been taken from advantageous places;
- Scheme does not conform to DC policy regarding tall buildings and other planning policies;
- Scheme does not address effects on infrastructure;
- Traffic is chaotic in Triq Hughes Hallet. The residents' garage is accessed directly opposite the main entrance to the Plevna Hotel;
- Effects on wind and shadowing; and
- Air quality issues especially on Ix-Xatt ta' Qui-Si-Sana which will exceed EU laws.

#### **San Roque Owners Association (28/09/2007)**

- Scheme is not in conformity with the North Harbours Local Plan in respect of height;
- Traffic situation will be exacerbated by the proposal;
- Infrastructure in the Tigné area is not sufficient for the proposal and other development;
- Traffic noise and construction / operation noise will severely affect residents;
- Light and privacy issues will result from the tower;
- Increasing population will make matters worse in Sliema;

- Traditional development will not have the same impact; and
- Proper study of the impact of the increase in traffic on air quality was not conducted.

**Comments from the Public (Various)**

- The Scheme will result in an exponential increase in pollution noise and disturbance;
- The EPS understates the visual impacts of the Scheme;
- Scheme goes against Structure Plan policies BEN 1 and BEN 2;
- Commercial activities should not be considered and not overlooked by bedrooms of adjacent apartments because of potential noise from air conditioners;
- Tower block is not appropriate; and
- Set backs and back yards are required.

#### **Appendix 4: Summary of comments received on EPS Update Addendum**

##### **Department for Environmental Health (30/03/2010)**

- Monitoring of noise, increased heavy vehicular traffic, air quality deterioration;
- Any unpredicted impacts to be addressed by the developer with appropriate mitigation measures;
- Complaints made by the public on any impacts should be immediately taken into consideration by the developer.

##### **Malta Resources Authority (18/03/2010)**

Same comments made in the first draft EPS

##### **Alternattiva Demokratika (14/03/2010)**

- Objecting against the proposal;
- Overdevelopment and overstretching of services;
- High traffic impact with effects on air and noise pollution;
- People's health to be negatively effected by pollution (dust, particulate and noise).

##### **Żminijietna (23/03/2010)**

- MEPA to take into consideration the large scale developments being constructed in Sliema which are affecting the daily life of the residents.
- Vacant dwellings in the locality of Sliema;
- Visual impacts;
- Traffic impact.

##### **Comments from the Public (Various)**

- No need for additional shopping malls and empty flats in this area;
- Overcrowded infrastructure which is already heaving;
- Object to more needless development in Sliema;
- Proposed plan does not respect sanitary laws and regulations in that:-
  - a) The proposed height of the 2 towers (height 23 and 15 storeys) and another high building which had to be 4 storey has been changed to 7 storeys besides other buildings surrounding the square, exceeds the proportion it should be in relation to the "Road Width".
  - b) The required backyard depth bears no relation to the proposed height.
- Against Floor Area Ratio;
- Proposal will create "Bad Neighbourliness" due to the amount of vehicular traffic generated cannot be sustained by the existing road network, which was not designed to cater for development of this order especially when considered in conjunction with the rest of the large projects planned for the locality. (Fort Cambridge – MIDI and Qui Si Sana car park);
- Proposal is located within a restricted area;
- Need for an EIA;
- Guarantees with regards to safety of residential property;
- Insurance cover before the commencement of the project.

## Appendix 5: Summary of comments received on EPS Update (Air Quality)

**Note: The ERA had no additional comments to those provided by the EIA Coordinator.**

### Comments from the Civil Protection Department (dated 5 May 2011)

Comments	Adi Reply Dated 6 <sup>th</sup> June 2011
Is there going to be fire brigade access and facilities. I have not read what fire fighting facilities and measures there going to be maybe because this is only the initial stages of the project. We will sure ask for compartmentation, fixed fire fighting systems, fire safety, fire hydrants, ventilation and more. I suggest that as when the decision is taken we should meet the architect/s and engineers involved beforehand.	Comments noted, however are not for the EPS to address. It is further noted that this is an Outline Development Application and such matters are normally addressed at full development permit application stage.
The development constitutes a mix of operations thus rendering a thin line of safety margin for those who are making use of the building once it is completed.	
It is strongly suggested that all provisions of fire safety that will ensure prevention, preparedness and response to any eventual fire emergencies are addressed appropriately. Furthermore, one should keep the different areas within the development which definitely have differing 'intended use' separate from each other to allow a safety net among the different activities.	

### Comments from the Environmental Health Directorate (dated 28 May 2011)

Comments	Adi Reply Dated 6 <sup>th</sup> June 2011
Although the impacts on NO <sub>2</sub> and PM <sub>10</sub> emissions are predicted to be in the magnitude of negligible to moderate in these (assumed) scenarios and it is expected that emissions will be lower than those estimated, the proposal that Applicant undertakes a Green Travel Plan which includes monitoring is highly recommendable. However this plan and means of enforcement and evaluation have not been submitted. Furthermore, this plan will only influence residents and possibly long-term users of scheme (e.g. workers) and not incidental users of facilities such as retail outlets.	Noted. The enforcement and evaluation of the plan will be regulated by MEPA. Again, it is noted that this is an Outline Development Application; details of the Green Travel Plan would be agreed at the Full Development Application stage.
The domino effect of decreased parking spaces to other Sliema residents and visitors and consequent increased traffic in this problem area will affect air	The EPS update addresses air quality in the area and the TIS addresses parking for residents and visitors.

quality and overall quality of life.	
This study comments on measures 1, 2, 4,7,12 and 14 from MEPA Air Quality Plan, published in January 2010 but conveniently ignores measures 21 and 22 on reducing traffic impact of new developments.	Comment noted. However, the aim of the EPS Update was to assess the impact of the Scheme on air quality. Based on the modelling, the area does not exceed limit values hence measures 21 and 22 are not applicable.
Has MEPA Guidance document “traffic generation, access and parking” and Supplementary Planning Guidance on the “assessment of the air quality impacts of new development” as required by the Air Quality Plan for the Maltese Islands (January 2010) been referred to?	The TIS is based on MEPA’s Terms of Reference and has regard to these matters.
The Directorate for Environmental Health would also like to remind assessors of this proposal of its concerns regarding air quality, noise, vibrations, traffic and safety issues affecting the health of sensitive receptors during (possibly prolonged) construction phase.	Noted.

#### Comments from the Sliema Residents Association (31 May 2011)

Comments	Adi Reply Dated 6 <sup>th</sup> June 2011
<b>GENERAL COMMENT ON THE EIA</b>	
<p>The Sliema Residents Association (SRA) – see <a href="http://www.sra.org.mt">www.sra.org.mt</a> for details - was constituted in 2009 to defend the interests of existing residents of Sliema. We have already gathered several hundred members and receive comments/support from many others. However the Town Square project dates from 2005 - before SRA was set up.</p> <p>Given that the Town Square project is directly related to the issues covered in the SRA statute and is covered by the public policies promulgated by SRA, we hereby ask for SRA to be registered as an objector retrospectively. We can provide further explanation if required and consider our request to be a reasonable one easily accommodated.</p> <p>Given MEPA's commitment to reform and open public consultation, we are confident that MEPA will understand and respect the wish of SRA to be kept informed this way.</p>	Comment noted, however this is for MEPA to address not the EIA Consultants.
<b>SPECIFIC COMMENT ON THE ADDENDUM TO THE EPS</b>	

The conclusion of PA1191/05 addendum 2011 implies that it is assumed that the number of vehicles will remain the same as today - an assumption that is not founded on any discernible trend or fact. An EIA should consider both the best and worst possible cases before advancing the likely case. Have the consultants engaged to provide the EIA and EPS considered that vehicular traffic in Sliema/the area may increase given the recent events such as the opening of The Point at Tigne?	The EPS is not based on the assumption that the number of vehicles will remain the same as today. The EPS is based on projected traffic to 2017. The 2005 baseline traffic counts were increased by 2 per cent per annum as is normal practice in TIS. The projections also include traffic generated by developments such as Fort Cambridge and Midi (therefore also including the Point).
It seems that the number of cars per capita in Malta has grown since 2005 without having yet reached a plateau, let alone declined. So the most likely possibility in the foreseeable future is one in which the number of cars circulating in Sliema will continue to increase. Certainly there has been no mitigation by MEPA, TM or the Local Council that give any reason to expect a drop off or standstill in traffic.	The EPS makes use of the network traffic flows projected in the TIS; such flows were increased from the 2005 baseline to 2017 in accordance with MEPA's Terms of Reference.
The ADT stated in 2007 that "further development in Sliema will precipitate the precarious traffic problems". The road infrastructure of the area around the Town Square project site is wholly inadequate to cope with a project of this scale in a location with such restricted access. The pollution and frustration involved in such a project can only be hurtful for the existing population of the area.	Comments noted. However, since 2007 substantial improvements have been made with regards to Triq Qui-si-sana infrastructure, including the Midi tunnel.

#### Comments from Flimkien għal Ambjent Aħjar (1 June 2011)

Comments	Adi Reply Dated 6 <sup>th</sup> June 2011
Flimkien għal Ambjent Aħjar (FAA) reiterates its concerns about over-development of this site and its effect on the neighbouring residents. We also raise the issue that the gardens surrounding Villa Drago are scheduled along with the Villa, therefore cannot be partially built up as indicated in the proposed plans.	Comment noted. However it is noted from the EPS that impacts on air quality are classified as negligible / slight, with a moderate impact identified in only one scenario.  With regards to Villa Drago, current plans are in accordance with an already approved MEPA development application.
FAA is also concerned about the disparity that it sees in some of the individual EPS consultants' conclusions and their assessment in the final rating, where it is felt that the severity of the effects of the development is often downgraded by the study coordinator.	The conclusions are based on the results of modelling. There is no subjective interpretation of results as significance is based on pre-defined criteria provided by MEPA.
Ever since the traffic studies were made, major	The EPS is not based on the assumption that

<p>changes to traffic in the area have taken place, which would not have been taken into account. These changes all concentrate more traffic on the access and exit points to this project, therefore we maintain that without a revision of the traffic study in this area, it is impossible to draw accurate conclusions. Have the consultants engaged to provide the EIA and EPS considered that vehicular traffic in Sliema/the area may increase given the recent events such as the opening of The Point at Tigné? The conclusion of PA1191/05 addendum 2011 implies that it is assumed that the number of vehicles will remain the same as today - an assumption that is not founded on any discernible trend or fact. An EIA should consider both the best and worst possible cases before advancing the likely case.</p>	<p>the number of vehicles will remain the same as today. The EPS makes use of the network traffic flows projected in the TIS; such flows were increased from the 2005 baseline to 2017 by 2 per cent per annum in accordance with standard MEPA Terms of Reference for TISs. The TIS also takes account of the traffic generated by Sliema Town Square and other developments in the area including Fort Cambridge and Midi.</p>
<p>It seems that the number of cars per capita in Malta has grown since 2005 without having yet reached a plateau, let alone declined. So the most likely possibility in the foreseeable future is one in which the number of cars circulating in Sliema will continue to increase. Certainly there has been no mitigation by MEPA, TM or the Local Council that give any reason to expect a drop off or standstill in traffic.</p>	<p>Noted (as above).</p>
<p>The ADT stated in 2007 that “further development in Sliema will precipitate the precarious traffic problems”. The road infrastructure of the area around the Town Square project site is wholly inadequate to cope with a project of this scale in a location with such restricted access. The pollution and frustration involved in such a project can only be hurtful for the existing population of the area.</p>	<p>Noted (as above).</p>

## Appendix 6: Summary of comments received on EIA Addendum 2015

**Note: The ERA had no additional comments to those provided by the EIA Coordinator.**

### Comments from the Transport Malta (email dated 18<sup>th</sup> November 2015)

Comments	ADI Reply Dated 10 <sup>th</sup> December 2015
Transport Malta finds no issues or concerns regarding the environmental impacts this proposal may have.	/

### Comments from the Environmental Health Directorate (email dated 3<sup>rd</sup> December 2015)

Comments	ADI Reply Dated 10 <sup>th</sup> December 2015
With reference to your e-mail dated 16 November 2015 regarding proposal indicated in caption and following review of the Addendum to the Environmental Planning Statement, please note that: In view that it has been concluded that with the exception of the visual assessment, impacts from the proposed Scheme remain the same as those assessed in the 2007 EPS and subsequent Addenda, our comments and recommendations in reports dated 22 March 2010 and 23 May 2011, especially regarding potential adverse air quality (dust), noise, vibration, traffic impacts and safety issues during the construction period are still to be taken into consideration.	Noted.

### Comments from Flimkien għall-Ambjent Aħjar (email dated 18<sup>th</sup> November 2015)

Comments	ADI Reply Dated 10 <sup>th</sup> December 2015
<p>Please refer to subject in caption.</p> <p>It has been noted that the developer is considering that the only changes in impact resulting from his revised proposal are on the visual impact. In so doing the developer is ignoring all other impacts.</p> <p>The addition of commercial and office space will increase existing impacts and it is expected that these are quantified by the EIA coordinator team.</p> <p>We maintain that the revisions in plans and are such that the original studies are no longer valid, therefore it is expected that all the original impact projections are revisited in order to ascertain the impacts of the final proposal.</p>	<p>As stated in the various documents contained in the Addendum, the Scheme as assessed in 2007, comprised the following elements: 242 apartments, 8,847m<sup>2</sup> of retail / F&amp;B and ancillary uses, 5,700m<sup>2</sup> of office space, and 800 car parking spaces. The latest Scheme proposal comprises 163 apartments, 4,719 m<sup>2</sup> of Offices, 8,241 m<sup>2</sup> of retail and 773 Parking spaces. Thus there is no additional commercial and office space when compared to the Scheme assessed in 2007.</p> <p>The various Addenda submitted since 2007 address the potential impacts that could be generated by the proposed changes to the Scheme including impacts on air quality and the visual impact.</p>

**Comments from Zminijietna (email dated 7<sup>th</sup> December 2015)**

Comments	ADI Reply Dated 10 <sup>th</sup> December 2015
<p>Zminijietna appeals MEPA for a Holistic Social Impact Assessment that includes 'a traffic impact assessment'. The area already suffers from high congestion and poor air quality.</p> <p>Also Zminijietna urges MEPA to take inconsideration the 'high-density development' in that area.</p>	<p>Comments addressed to MEPA.</p>

**Comments from Din l-Art Ħelwa (email dated 9<sup>th</sup> December 2015)**

Comments	ADI Reply Dated 10 <sup>th</sup> December 2015
<p>Location :Old Union Club, (between) Tower Road, Hughes Hallet Street, Tigne Street, Qui Si Sana Lane, Ix- Xatt Ta' Qui-Si-Sana, Sliema, Malta</p> <p>Description Excavation of the site and construction of underground parking and service facilities. Construction of low rise buildings including a 38 storey tower, in a pedestrianized mixed development of retail and office outlets, food and beverage outlets, and residential units. Change of use of Villa Drago to cater for retail and food and beverage establishments RE: EPS addendum</p> <p>DLH objects to the application in caption.</p> <p>The proposal includes the following.</p> <ol style="list-style-type: none"> <li>1. Number of residences – 163 apartments (33,277 m<sup>2</sup>, excluding terraces);</li> <li>2. Offices – 4,719 m<sup>2</sup> ;</li> <li>3. Retail – 8,241 m<sup>2</sup> ; and</li> <li>4. Parking – 773 space</li> </ol> <p>The EPS Addendum shows that the Viewpoint from Gzira and Valletta have taken a negative impact-viewpoint especially from Valletta. The Latter viewpoint is a very important one a drastically change in viewpoint can alter the Unesco status that Valletta currently wears so proudly. All viewpoints 1,2,3,10,11 show the adverse impact that the proposed tower would have.</p> <p>The EPS Addendum also states that the increase in floor does not have quantitative difference to previous findings. However increased shadows, microclimate and distance views even if marginal could definitely be perceived drastic by us humans. Similar results are found to be true for pollution levels</p>	<p>The issues raised have been addressed in the certified 2007 EPS and the subsequent Addenda.</p>

which are only increasing marginally according to the EPS addendum.

DLH believes that the existing infrastructure cannot assimilate a project of this scale without having negative consequences on the existing building fabric and environment. Everyone is constantly complaining about traffic, the smell of exhaust in the air and the density of people which has increased greatly in the past years. All of these factors effects are daily lives are definitely not to be improved but only worsened by a project of this scale. DLH believes that MEPA as an urban planner needs to recognize that developing further and intensifying our urban built environment is no longer a possibility due to its detrimental effect.

DLH would also like to comment that it previous submission back in 2007 is not present on this report. Din I-Art Helwa (DLH) has also submitted an objection to this development on the 27th of July which objection is being inserted hereunder.

Din I-Art Helwa would like to object to the application in caption. This application also known as the Townsquare project proposes a mixed used development which includes a 38 storey tower in the middle of an already very densely built up area, Sliema.

The application's history dates back to 2005 and ever since its conception the proposal has expanded in scope, uses and height in favour of the developer's pocket and to the detriment of the remainder of society particularly does in the immediate vicinity.

DLH objects to the project due to the following reason:

1. Traffic & Social Impact: An environmental impact study presented by the developer for an earlier proposal which was then a 23 storey tower had estimated that the project would increase peak traffic flow in the Qui-Si Sana area by approximately 4000 vehicles. This additional volume of vehicles circulating the is not only cumbersome to the residents but also a cause of degradation of air quality to an already heavily urbanized areas. The surrounding road network has already reached its maximum capacity and there is no proposal to mitigate any of the negatives effects created by the increased traffic flow and parking problems. The existing infrastructure does not support this increase in population.

2. Shadowing: Project creates increased shadowing on

adjacent properties, the promenade, the rocky foreshore and the sea.

3. Visual Impact: The visual impact on the Sliema peninsula will be most obvious from Valletta and at sea as one approaches Sliema from either side. The existing developments in the same area have already altered greatly the skyline however intensifying the skyline with further developments will only create a broken skyline. One must point out that this development is much higher than the existing ones.

DLH would like to appeal to MEPA to take on its role as an urban planner whereby a true assessment of the limitations imposed by existing density and infrastructure play a vital role in permitting new development of this scale. DLH also believes that a revised environmental impact assessment should be carried out.