

# Environment Impact Assessment (EIA) Report

## GFE 00003/09 (PA 01179/10) - Development of a Technology Enterprise Centre leading to a Life Sciences Park, at San Ġwann Industrial Estate, San Ġwann

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### 1. BRIEF DESCRIPTION OF THE PROPOSAL

The Malta Environmental and Planning Authority (MEPA) requested an Environmental Planning Statement (EPS) to support GFE 00003/09 (PA 01179/10) for *the development of a technology enterprise centre leading to a Life Sciences Park, at San Ġwann Industrial Estate, San Ġwann*, as per Schedule IA, Category I, Sections 3.1.2.1, 3.2.2.1 and 3.10.2.1 of the EIA Regulations, 2007 (L.N. 114 of 2007). The application is for outline development permission.

The EPS included 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. The EPS was co-ordinated by Adrian Mallia, Rachel Xuereb and Bill Richardson from ADI Associates Environmental Consultants Ltd.

### THE PROPOSED DEVELOPMENT

The proposal aims to develop a Life Sciences Park, considered to be a fundamental key factor in maintaining existing Foreign Direct Investment (FDI), attracting new FDI and sustaining the local industrial base. The Life Sciences Park will encompass the whole innovation life cycle and supply chain process for companies specialising in areas related to Life Sciences, from the development of the innovation process through to ongoing growth within the Park. Throughout the various stages of their life cycle these companies would be backed by the technical support and Research and Development (R&D) facilities, by providing the right balance between infrastructure and soft support for business development phases.

The proposed development consists primarily of Class 11(a) R&D uses across two phases of development. The proposed mix of land uses includes: innovation lab, R&D lab, working spaces, conference and meeting rooms, offices, specialised testing lab, incubation units, bank, training facilities, child care, business centre and enterprise area. The main land use elements associated with the development include:

- Zone A – Life Sciences Centre;
- Zone B – Business Incubation Centre;
- Zone C – Support Facilities ;
- Zone D – Enterprise Centre ; and,
- Zone E – Landscaping.

The development of the Life Sciences Park shall comprise two main phases:

- **Phase 1:** comprising the completion of Zones A, B and C and E and the continuation of the landscaped Zone E to cover the area occupied by Zone D (as per Figure 4.12 of the EPS) and,
- **Phase 2:** comprising the development of the Enterprise Centre buildings. This will be developed at a later stage to be determined by Malta Enterprise.

### 2. EIA CONSULTATION

As part of the EIA process, consultation with various consultees was carried out during the scoping and the reviewing stages. Public consultation was undertaken during the scoping and following the certification of the EPS.

#### 2.1 Consultation during Scoping

During the scoping stage, the Project Description Statement (PDS) was circulated to the following consultees and made available for public consultation on 13<sup>th</sup> April 2009:

- San Ġwann Local Council (SGLC);
- Malta Resources Authority (MRA);
- Nature Group (NG);
- Department of Environmental Health (DEH); and,
- Foundation for Medical Services.

Within the stipulated consultation period, comments were received from MRA (Energy, Water and Minerals Directorates) and the Department of Environmental Health. These are inserted in Appendix 1 to this Report. Final terms of reference were issued on 15<sup>th</sup> May 2009.

## **2.2 Consultation during Review**

The first draft EPS was submitted to MEPA on 10<sup>th</sup> June 2010 and circulated for review to the same consultees consulted during the scoping stage (see para 2.1 above). The EPS was also circulated for internal review within MEPA.

Within the stipulated consultation period, comments were received from the Department of Environmental Health. Comments made by MEPA and its consultees during the review stage were forwarded to the EIA Coordinator, the developer and the architect on 19<sup>th</sup> July 2010. These comments were addressed by the EIA Coordinator and responses were submitted to MEPA, all of which can be found in an Addendum to the EPS Coordinated Assessment Report. Comments received during the public consultation period are inserted in Appendix 2 to this Report.

## **2.3 Consultation following Certification**

The certified EPS was published for a three-week public consultation period on 9<sup>th</sup> November 2010. Deadline for submissions was 3<sup>rd</sup> December 2010. No comments were received during this period.

## **3. EIA FINDINGS**

The following characteristics of the site, assessment of impacts and mitigation measures were identified in the EPS (summary found in Table 11.3 of the Coordinated Report).

### **3.1 LAND COVER AND LAND USE**

The land uses of the site and surroundings are illustrated in Figure 4.11 of the EPS Coordinated Report and include the following:

- Industrial land (namely the San Ġwann Industrial Estate);
- Residential;
- Agricultural;
- Commercial;
- Institutional;
- Recreational;
- Open land;
- Mixed land use; and,
- Car parking.

### **3.2 GEO-ENVIRONMENTAL RESOURCES**

The study was based on field surveys and subsurface investigation in relation to geology, geomorphology, hydrology and hydrogeology of the site.

#### Geology

The rock formation outcropping at the development site and the area of influence is the Globigerina Limestone (Figure 7.3 and 7.4 in the EPS Coordinated Assessment). Only the Lower Globigerina Limestone Member is present within the area of influence, although no outcrops of this member could be observed as it is covered by buildings, roads or fields.

With respect to faulting, no faults intersect the area of influence. The nearest fault is a normal fault striking west-north-west to east-south-east and downthrowing north-north-east. This fault is located 1.5km to the east-south-east of the site and belongs to the second and younger system of faults.

### Geomorphology

The relief and landforms within the proposed site and the surrounding area are predominantly controlled by lithology and fluvial erosion processes, and the principal geomorphological features within the area of influence include (Figure 7.6 of the EPS Coordinated Assessment refers):

- Gently rolling landscape; and,
- Dry valley.

### Hydrology

The hydrological and hydrogeological features identified within the area of influence included (Figures 7.7, 7.8 and 7.9 in the EPS Coordinated Assessment refer):

- Dry valley (Wied Għollieqa) and associated catchment;
- Mean Sea Level Aquifer;
- Waste Services Corporation Boreholes and the Groundwater Protection Zone.

### Mineral Resource Assessment and Site Investigations

The rock core samples recovered were of very good quality composed of cream colours to fine moderately strong limestone 26.7m thick, underlain by a bed of clayey limestone over 6m thick. This bed extends down to the top of the Lower Coralline Limestone some 50m below ground level. Significant levels of overburden were recorded at boreholes 1 to 3. The presence of significant levels of fill at the southern part of the site suggests that relatively little excavation of bedrock will be needed to implement Phase 1 of the proposal, in comparison to Phase 2. The assessment also showed that the rock in the area is moderately weak to moderately strong.

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

The excavation process for the proposed development will result in the removal of 159,655 cubic metres of overburden and bedrock (the proportion of overburden versus bedrock varies between each phase). In this regard, the impact on the geology due to resource extraction is considered to be of *major significance*. Excavated rock can be reused and recycled for construction purposes. The EPS also identifies potential excavation risks due to the stability of surrounding land as not significant, subject to good site management practices and a suitable Construction Management Plan (CMP).

With respect to hydrology, the EPS identified three potential impacts: aquifer recharge, pollution of the aquifer and pollution of run-off. With respect to aquifer, the EPS states that the proposed landscaped area provided with the implementation of SUDs (Sustainable Urban Drainage feature) are sufficient to ensure that the impact from the proposed development will be range between *not significant* and *minor positive*. Also, given that the site lies on the edge of a Groundwater Protection Zone, appropriate run-off collection measures shall be implemented, particularly during construction and excavation, including reservoirs, appropriate collection points and interceptors. The EPS predicts the potential impacts on the aquifer and Wied Għollieqa as of *minor (positive)* significance.

### **MITIGATION MEASURES**

- Collection of rainwater falling within the site (through SUDs and reservoirs);
- Use of storm water interceptor to separate surface water pollutants prior to acceptance by rainwater reservoir;
- Soil to be removed when dry in order not to negatively affects its structure; soil to be stored in a specially dedicated area on site for use in the landscaping scheme;
- No servicing of vehicles or machinery to be carried out on site;

- Re-use of excavated material; and,
- Formulation of a Construction Management Plan.

### **RESIDUAL IMPACTS**

The above mitigation measures should mitigate most of the impacts identified; however impacts on the geology of the site in relation to resource extraction can only be mitigated through the re-use of excavated rock for construction purposes and reduction of parking requirements, leading to less excavation. In this regard, the residual impact has been identified to be *major to minor* depending on extent of re-use and reservoir and car parking requirements for Phase 2 of the proposed development.

### **3.3 LANDSCAPE AND VISUAL AMENITY**

The visual amenity assessment was based on a desk study, which determined the Zone of Visual Influence (ZVI), the related viewpoints and field survey methodology. The landscape assessment was based on a desk study and field survey.

#### Landscape Assessment

The proposed development is situated at the urbanised head of Wied Għollieqa. The landscape has only recently been substantially affected by urban intervention. The first phase of the San Ġwann Industrial Estate (including the proposed development) was built in the 1960s and was soon followed by the relocation of the University to its new campus from Valletta to Msida in the late 1960s. This was the introduction of new urban forms along Wied Għollieqa. Since the 1960s, San Ġwann, Msida and Birkirkara have continued to grow as urban settlements and the northern slopes of the valley have become characterised by the expansion of San Ġwann for residential development. The San Ġwann Industrial Estate continued to grow and in the 1990s construction of the Mater Dei Hospital commenced.

The cumulative consequence of this has been a coalescence of the localities of Msida, San Ġwann and Birkirkara. The remaining parts of Wied Għollieqa retain some visual separation between the three areas but much of the original geomorphology of the area is no longer recognisable.

The landscape types/character areas (Figure 8.2 of the EPS Coordinated Assessment) that form the landscape context to the proposed site are as follows:

- *Landscape Type*  
Urban conurbation

- *Character Areas*

#### 1. West Marsamxett Conurbation Character area

- Local Landscape Tract 1: Industrial
- Local Landscape Tract 2: Urbanised slopes
- Local Landscape Tract 3: Continuous urban area
- Local Landscape Tract 4: Urban green pocket
- Local Landscape Tract 5: Valley side – campus (Hospital and University)
- Local Landscape Tract 6: Valley floor
- Local Landscape Tract 7: Urbanised valley

#### 2. 'San Gwann Hinterland' Character area

- Local Landscape Tract 8: Agricultural uplands;
- Local Landscape Tract 9: Valley.

#### Visual Amenity

The zone of visual influence (ZVI) for the proposed development (Figure 8.1 of the EPS Coordinated Assessment) was defined using a combination of desk and field-based techniques. Six viewpoints (Figure

8.1 of the EPS Coordinated Assessment) to assess the visual impact of the proposed development were identified:

- Viewpoint 1: Triq San Ġwann tal-Għorġhar, San Ġwann
- Viewpoint 2: University Ring Road – Vicinity of Cark Park 7
- Viewpoint 3: Hospital (Mater Dei) Main Entrance
- Viewpoint 4: Hospital Roundabout
- Viewpoint 5: View from North-South Spine Road linking Triq Bellavista to B'Kara By-Pass
- Viewpoint 6: Hastings Gardens, Valletta

#### **IMPACTS ON LANDSCAPE AND VISUAL AMENITY**

The changes to the landscape during construction and operation are assessed together. In terms of landscape character, the EPS states that impacts occur as a result of the construction phase. Hence the assessment of the proposal during operation is the same as that for the construction (completion of the buildings to their full height) and covers the loss of landscape features and the effects of the proposal on those remaining. The impacts on character areas is overall identified as being *not significant*, with Local Landscape Tracts 1, 5 and 6 being of *minor (positive) significance*.

With respect to visual amenity, the impact of the proposed development on the visual amenity of the areas portrayed in the photomontages is defined as being of *minor to no significance*.

No mitigation measures are being proposed and thus residual impacts would be the same as the unmitigated impacts.

#### **3.4 AIR QUALITY AND CLIMATE CHANGE**

The emissions considered pertinent to the development of the proposal, according to the EPS are the following:

- Operational emissions – activities;
- Operational emissions – traffic; and,
- Construction emissions – primarily dust.

Principal emissions arising from traffic are carbon monoxide (CO), nitrogen oxides (NOx), Volatile Organic Compounds (VOCs), particulates, and 1,3-butadiene. Dust will arise during demolition and construction of the proposal. Baseline air quality was assessed through MEPA's on-going air quality monitoring data. The area of influence considered in the air quality assessment can be found as Figure 9.1 in the EPS Coordinated Assessment.

The EPS states that MEPA air quality monitoring data shows that for PM10 is limited to the monitoring station at the University entrance in Msida, which describes significant exceedance of annual average limit value at the nearest monitoring station. In 2007, the EU daily limit value of 50µg/m<sup>3</sup> was exceeded on 56 out of 237 days measured at Msida (limit is 35 days a year). With respect to NO<sub>2</sub>, through the air quality monitoring data, it was note that these were close to the EU average annual limit values for the bordering localities of Msida and Birkirkara for 2007 (38.94 and 34.36 respectively). At San Ġwann, this was exceeded by a small margin in 2007 at 40.82 NO<sub>2</sub>/µg/m<sup>3</sup>.

#### **IMPACTS ON AIR QUALITY AND CLIMATE CHANGE**

During the construction phase, the main emissions are likely to be dust and particulate matter generated during construction itself or from the handling of construction materials. Emissions from construction vehicles and equipment are expected to be *negligible*. Emissions of dust from site excavation and construction works are likely to occur during the two construction phases of the proposed development. The impact of dust entrainment from the excavation of the site has been identified as being of *minor significance* for Phase 1 due to the relatively short construction period and limited excavation of bedrock.

During Phase 2, however, the larger quantities of bedrock to be excavated and the operation of the Oncology Centre in close vicinity of the proposed development, significance of the impact would be *higher*.

In order to assess impacts of emissions during the operations phase, the DMRB model was utilised to consider traffic impacts associated with the proposed development, together with the different scenarios related to the different phases of the proposed development, i.e. in 2013 with Phase 1 fully occupied; in 2018 with Phase 1 fully occupied; and 2018 assuming full occupation of Phase 1 and 2 of the proposal. The following section illustrates the main changes associated with air quality during operation:

- Annual mean concentrations of NO<sub>2</sub>: Modelling shows that NO<sub>2</sub> concentrations exceed the limit value of 40 µg/m<sup>3</sup> at the proposed Oncology Centre both with and without the proposal. For all the scenarios analysed in relation to this receptor, the EIS defines the impact as being imperceptible (*negligible*). With respect to the closest residential receptor to the hospital roundabout (Receptor No. 4), the NO<sub>2</sub> limit values are already exceeded and range between 51.43 µg/m<sup>3</sup> and 53.37 µg/m<sup>3</sup> (2018 scenario). Although limit values are likely to be exceeded, the increase in NO<sub>2</sub> concentrations is considered to be small, and therefore of *minor significance*.
- Annual mean concentrations of PM<sub>10</sub>: DMRB showed that concentrations of PM<sub>10</sub> do not exceed annual mean limit value of 50 µg/m<sup>3</sup> with and without the proposed development at the site of the Oncology Centre, thus defining them as imperceptible and *not significant*. Also, with respect to the closest residential receptor, PM<sub>10</sub> concentrations shall exceed the limit value of 50 µg/m<sup>3</sup> with and without the proposal, ranging between 51.69 µg/m<sup>3</sup> and 53.17 µg/m<sup>3</sup>. Although these limit values are exceeded, impact on the sensitive receptors is considered as *small and of minor significance*.
- Days exceedance of PM<sub>10</sub> limit value: The impact associated with Phase 1 of the proposal is classified as *negligible* in terms of daily exceedance of PM<sub>10</sub>. The impact associated with the operation of Phases 1 and 2 of the proposal is classified as '*slight adverse*' in terms of daily exceedance of PM<sub>10</sub>. The impact at the proposed Oncology Centre in terms of number of daily exceedances is therefore of *minor significance*. With respect to the closest residential sensitive receptor, the results shows that there will be a significant increase in the number of exceedance days associated with Phase 1 and 2 of the proposal, and thus leading to a substantial adverse impact of *major significance*.

With respect to operational emissions, Phase 1 of the proposal is anticipated to be operational by 2013, while Phase 2, at the earliest, should be around 2025. The principle source of potential impact on local air quality is anticipated to be traffic related activities rather than being operational emissions. Given the nature of the proposal, quantification of emissions is not possible and thus related impacts are classified as *unclear*.

Climate change and GHG emissions: The EPS stated that it is likely that the requirements of the proposal (per m<sup>2</sup>) will be lower than the previous factory uses, which were focused on industrial production (particularly the former VF factory). The EPS states that in view of the fact that the end tenants of the proposed development are not known, the final testing/laboratory or other processes taking place on site cannot be identified at this stage. However, estimates based on similar developments abroad, the proposal would result to a total emission of CO<sub>2</sub> to 1,742 tonnes which would translate to 0.087% of the total annual consumption based on 2005 figures.

#### **MITIGATION MEASURES**

- Implementation of Environmental Management Construction Site Regulations, 2007, including use of additional measures such as water dousing regimes to minimise dust impacts;
- Implementation of a Green Travel Plan (GTP) and associated measures;
- Reduction of electricity consumption through energy efficiency measures and use of renewables.

## RESIDUAL IMPACTS

It is anticipated that there will be residual impacts during the construction phase with respect to impact of dust on the users of the site and the surrounding land uses. In this regard, impact is considered to be of temporary nature for the duration of the construction phase and of *minor significance*. Traffic-related residual impacts are also likely to occur, following the completion of both Phase 1 and 2. The significance of these residual impacts is likely reduced from 'major' to 'major to minor' provided the mitigation measures mentioned above are implemented.

## 3.5 NOISE EMISSIONS AND VIBRATIONS

Background noise levels were established by undertaking a daytime survey at each of the four noise monitoring locations and a night time survey at the same locations. Impact assessment of noise arising from the construction and operation of the proposed development considered the proximity of the noise-sensitive land uses and activities. Noise sensitive receptors according to which the noise monitoring points were chosen include (Figure 10.1 of the EPS Coordinated Assessment refers): hospital patients (particularly in-patients), hospital Oncology Centre (recently granted a development permit), residents along Triq San Ġiljan, workers on the San Ġwann Industrial Estate and surrounding road users including pedestrians and cyclists.  $L_{AEQ}$  readings resulted in 55, 68, 70 and 74 dB(A) during the day, and 45, 61, 61 and 64 dB(A), respectively during the night.

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

## IMPACTS IN TERMS OF NOISE AND VIBRATIONS

Noise resulting from excavation and construction activities is likely to span the construction periods associated with Phase 1 and Phase 2 of the proposed development. The most noticeable noise will be that which results from excavation (particularly during the Phase 2 construction period, which will require most cutting and extraction of bedrock, a more noisy activity than the removal of overburden which is already broken up). Such noise being limited to working hours, and for the most part not continuous, and spanning a period of 3 months for Phase 1 and an estimated period of 6 months in Phase 2.

At the noise assessment points, the predicted  $L_{AEQ}$  noise levels during the demolition phase are likely to reach between 79db(A) and 83 db(A); during excavation, noise levels are likely to reach between 79db(A) and 83 db(A); and during construction, noise levels are being predicted to be around 74db(A) and 78 db(A). The EPS predicts that noise levels resulting from demolition, excavation and construction are likely to dissipate to below background at all nearby sensitive receptors. With respect to operational noise, the EPS mainly correlated operational noise to increased traffic and changes to traffic flows and patterns, thus assessing this impact as being of *no significance*.

With respect to vibrations, the impact of vibrations on the structural integrity of surrounding buildings during excavation and construction is considered to be *minor to not significant*. Vibrations arising during construction that may have impacts on people in adjacent buildings are considered to be *minor to not significant*.

## MITIGATION MEASURES

- Majority of excavation to be carried out with a trencher and ripper; and,
- Excavation of a trench (deeper than the excavation itself), would reduce the effects of the vibration on structures and persons to not significant during the excavation period of Phase 2 of the proposed developments.

## RESIDUAL IMPACTS

It is anticipated that noise arising from demolition, excavation and construction activities will extend over the duration of the construction period for Phase 1. Such residual impacts will be *insignificant* at the sensitive receptors.

### 3.6 WASTE

The waste generated by the proposed development can be described as follows:

- Demolition waste: total volume of demolition waste to be removed from the site is 103,961m<sup>3</sup>;
- Excavation waste: proposal is estimated to generate 159,655m<sup>3</sup>: 99,365 m<sup>3</sup> of excavation waste during Phase 1 of the project and approximately 60,290m<sup>3</sup> for Phase 2. The said excavation waste for both phases would be transported by the excavation contractor to licensed landfill sites;
- Run-off;
- Foul water arising from the ablution facilities;
- Construction waste: reinforcement – most of the reinforcement will be prepared to measure off site, therefore, the waste generated will mostly consist of mesh cut-offs; surplus concrete and mortar; surplus waste pipework and building finishes; and masonry, made up of pieces of concrete block work;
- Soil; and,
- Waste arising from the operation of the proposed extension which includes municipal solid waste, packaging waste, and maintenance waste.

### 3.7 CUMULATIVE IMPACTS

With respect to cumulative impacts of the proposed development (Chapter 11 of the EPS Coordinated Assessment refers), the EPS states that sensitive receptors, namely patients at Mater Dei Hospital, should not be subject to the combined impacts of excavation/demolition activities on both sites. The majority of works would have been carried out on the site of the proposal prior to the first occupation of the Oncology Centre by patients.

### 3.8 PLANNING, POLICIES AND LEGISLATION

The EPS considers the relevance of international and national legislation and Maltese planning policy to the proposed development. The following is list of main regulations to which the construction and operation of the proposal should conform:

#### 3.8.1 National Legislative and Regulatory Framework

*Development Planning Act, 1992*

- Environmental Impact Assessment Regulations, 2007,
- Environmental Management Construction Site Regulations, 2007.

*Environment Protection Act, 2001*

- Air Quality:
  - **Legal Notice 216 of 2001**: Ambient Air Quality Assessment and Management Regulations, 2001;
  - **Legal Notice 224 of 2001 (as amended by LN 231 of 2004)**: Limit values for Sulphur Dioxide, Nitrogen Dioxide and Oxides of Nitrogen, Particulate Matter and Lead in Ambient Air Regulations, 2001; and,
  - **Legal Notice 163 of 2002**: Limit Values for Benzene and Carbon Monoxide in Ambient Air Regulations, 2002.
- Waste Management:
  - **Legal Notice 337 of 2001, Legal Notice 797 of 2004 and Legal Notice 106 of 2007**: Waste Management (Permit and Control) Regulations, 2001; Waste Management (Activity Registration) Regulations, 2004; and Waste Management (Activity Registration) Regulations 2007;
  - **Legal Notice 161 of 2002**: Waste Management (Waste Oils) Regulations, 2002;
  - **Legal Notice 98 of 2004**: Waste Management (Packaging and Packaging Waste) Regulations, 2004.

- Water:
  - **Legal Notice 194 of 2004:** Water Policy Framework Regulations in combination with **Legal Notice 23 of 2004** and **Legal Notice 203 of 2002**.
- Noise:
  - **Legal Notice 193 of 2004:** Assessment and Management of Environment Noise Regulations;
  - **Legal Notice 64 of 2002:** Protection of Workers from the risks related to exposure to noise at work Regulations, 2002;
- Other:
  - **Legal Notice 217 of 2001:** Freedom of Access to Information on the Environment Regulations.

*Fertile Soil (Preservation Act), 1973:*

- **Legal Notice 104 of 1973:** Preservation of Fertile Soils Regulations.

*Malta Resources Authority Act, 2001:*

- **Legal Notice 203 of 2002:** Protection of Groundwater against Pollution caused by certain Dangerous Substances Regulations;
- **Legal Notice 23 of 2004:** Quality of Water for Human Consumption Regulations, 2004; and,
- **Legal Notice 139 of 2002:** Sewage Discharge Regulations, 2002.

*Solid Waste Management Strategy.*

### **3.8.2 Local Planning Policy**

*Structure Plan Policies:*

- Manufacturing Industry: IND1;
- Built Environment: BEN1, BEN2, BEN3, BEN7, BEN8, BEN12, BEN17;
- Utilities: PUT 8;
- Waste: PUT 13;
- Transport: TRA2, TRA4;
- Agriculture: AHF 4;
- Rural Conservation Areas: RCO1, RCO3;
- Cultural Heritage: UCO 7;
- Scenic Value: RCO4, RCO5;
- Ecology RCO 12, RCO15;
- Valleys: RCO 28, RCO 29;
- Aviation: AVN 3.

- *Space for Waste: the Waste Management Subject Plan*

- *North Harbours Local Plan: NHSE03, NHCI02, NHSG04, NHCV01, NHTU01, NHTU04, NHSG07.*

*Policy and Design Guidance, 2007:* In terms of building design, building height, access, parking requirements, and residential amenity.

*Car Parking Guidance – Circular PA 3/93*

### **3.8.3 Further Legislation**

The proposal also falls within the scope of the following legislation, not referred to in the EPS:

*Air Quality*

- **Legal Notice 291 of 2002:** *National Emission Ceilings for Certain Atmospheric Pollutants Regulations*

*Energy:*

- **Legal Notice 238 of 2006:** Minimum Requirement on the Energy Performance of Buildings.

*Guidelines on Trees, Shrubs, and Plants for Planting and Landscaping in the Maltese Islands, 2002*

## **4. EIA CRITIQUE - EPD COMMENTS AND CONCLUSIONS**

The Environment Protection Directorate essentially agrees with the EPS Consultants' coordinated assessment and with their ensuing recommendations, particularly the minor impacts associated with landscape and visual impacts given the context of the site and the insignificant impacts on the hydrology of the site given the incorporation of SUDs (sustainable urban design) in the proposed development.

The EPS 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, short term and major residual impacts have been identified as follows:

- Impacts related to changes to the geo-environmental features of the site, namely related to resource extraction;
- Impact of vehicle emissions on the closest residential receptor due to changes in PM<sub>10</sub> daily exceedance during Phase 1 of the proposed development; and,
- Impact of vehicle emissions on the closest residential receptor due to changes in PM<sub>10</sub> daily exceedance during Phase 2 of the proposed development.

In the case of residual impact related to resource extraction, the consultants have proposed that re-use of excavated rock for construction purposes is carried out (given that this was identified to be of very good quality according to laboratory tests) and that particularly during Phase 2 of the proposed development, the use of the Green Travel Plan should be considered given that this would reduce the overall car parking needs (and hence the excavation quantities) through the encouragement of use of alternative travel modes to the proposed development.

With respect to the residual impacts on the closest residential receptors related to PM<sub>10</sub> daily exceedance during Phase 1 and 2 of the proposed development, the EPD has serious concerns with these given that the EPS has identified that at one of the receptors (No. 4 closest residential receptor to the hospital roundabout), predicts significant impacts as follows: in 2013 with Phase 1 running, the days with PM<sub>10</sub> daily exceedances shall increase by 5.3 days, while in 2018, with Phase 1 and Phase 2, this will increase to 5.4 and 8.8 days respectively (Table 9.6 of the EPS Coordinated Assessment refers). In this regard, from an air quality point of view, the project cannot be considered favourably given that days of exceedance of the PM<sub>10</sub> daily limit value can not be greater than 2, in accordance with the Air Quality Directive 2008/50/EC. The area is of particular concern since the situation in relation to air quality is already exceeding the parameters mandated by the Air Quality Directive, namely Article 13 which explicitly states that the limit values for PM<sub>10</sub> (amongst other pollutants) shall not be exceeded throughout the zones and the agglomerations. As also identified in the EPS, this impact is considered to be of *substantial adverse impact* and despite the mitigation measures listed as part of the Green Travel Plan, there is a high degree of uncertainty, leading to a residual impact of minor to major significance. In this regard and should the proposal be favourably considered, the need for a Green Travel Plan is being included as part of the permit conditions, and would need to set clear targets for traffic reduction in order to ensure that the unmitigated impacts of the development do not materialize.

During review of the EPS, the Environment Protection Directorate also came across additional recommendations, such as the requirement for an environmental permit at Full Development stage, and monitoring requirements in relation to air quality, noise and vibrations given the proximity of the proposed development to the Mater Dei Hospital. Such requirements, along with other permit conditions can be found in the attached document.

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**Compiled by: Charlene Smith, Environment Protection Officer, Environmental Assessment Unit on 10<sup>th</sup> January 2011**

**Approved by: Alex Camilleri, Unit Manager, Environmental Assessment Unit on 8<sup>th</sup> February 2011**

**Date: 14<sup>th</sup> February 2011**

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Appendix 1: Scoping comments submitted to MEPA during scoping consultation (22/10/07-12/11/07).

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Reference  
Malta  
Resources  
Authority  
  
(Minerals  
Directorate)  
  
Email  
(27/04/2009)

**Comment**

The **Energy Directorate** would like to submit comments which it wishes to see included in the TOR for the above mentioned development.

**Temporary Fuel Storage**

During the construction phase of the project fuel will be required for the operation of standard construction machinery. The directorate recommends that if a temporary fuel storage is kept on site to re-fuel the vehicles and mechanical plant, then the following points should be considered:

- The fuel consumption is calculated beforehand in order to avoid unnecessary bulk storage;
- The fuel/storage location should be decided following identification of any potential routes for pollution should containment fail;
- The fuel storage should be located away from the site drainage system;
- The fuel storage area must be located in an area away from vehicle movement to prevent accidental collision;
- The fuel storage must be located on an impermeable base with a bund to contain at least 110% of the maximum capacity;
- The storage tanks are to be properly labelled as to their contents and capacity;
- A store of spill response material, such as absorbing sand is kept on site. A sign indicating action in the event of spillage and the location of the nearest spill response kit are also to be affixed;
- Consideration is given for protecting the fuel bund from rainwater;
- The fuel deliveries should be supervised by a competent person.

**Energy Saving in Buildings and Use of Renewable Sources of Energy**

The Directorate notes that *“the Technology Enterprise Centre building and its satellite buildings will comply with document F of Legal notice 238/2006 (Minimum Requirements on the Energy Performance of Building Regulations)”* and *“that Energy conservation is promoted through the highest standards of thermal efficiency”* and *“that energy conservation will be incorporated in the design process”*. The directorate therefore expects that this is reflected in a detailed energy management report which should be submitted at a later stage. This would include:

- Quantitative details on the inclusion of the renewable sources of energy and an estimate of their effectiveness.
- • Energy efficiency measures being taken in the design of the complex and what energy savings are envisaged to be obtained from such measures.

**Malta  
Resources  
Authority**

The **Minerals Directorate** would like to submit comments to be included in the TOR for the above mentioned development.

**(Minerals  
Directorate)**

It is mentioned in the PDS that '*vacant factories which need to be demolished and excavations will be required*'. In the circumstances it would be useful if the developer must specify the volume and quality of rock to be excavated in the course of the development. This information is needed for a proper assessment of the impact of the development on the mineral resources potential of the site.

**(Email  
04/05/2009)**

**Malta  
Resources  
Authority**

Further to your request for comments on the PDS below please find a list of issues to be included in the EIA.

**(Water  
Directorate)**

(i) Developer must clear all the issues relating to connectivity with the public sewerage system with the Water Services Corporation. The document must also provide adequate discharge limits agreed with the Corporation;

**(Email  
04/05/2009)**

(ii) Full details on the proposed methodology for the storage and eventual disposal of identified hazardous wastes is to be provided; and

(iii) Complete information on the proposed rainwater harvesting facilities and eventual use is to be provided.

**Department  
of  
Environmental  
Health**

With reference to your e-mail dated 13 April 2009 regarding proposal indicated in caption and following review of the Project Description Statement forwarded to this Department, we would like to have the following issues related to public health included in the terms of reference for this development :

**(Email  
05/05/2009)**

The health related impacts from the development on:

1. Air pollution especially from fine dust during the demolition and construction stage, including its effects on the surrounding area;
2. Waste disposal issues off site including disposal of storm water;
3. Noise and vibration pollution;
4. Traffic related problems;
5. The overall cumulative impacts of the development on the general public are also to be assessed with special reference to sensitive institutions namely the Mater Dei Hospital and the University of Malta which are located in the immediate vicinity of the proposed project.

The EIA should also include a detailed description of the measures envisaged to prevent, minimise and where possible offset any significant adverse health effects on the general public. This should include details regarding monitoring programmes that may be proposed. The EIA should also identify, describe and discuss in detail the possible health effects of any residual impacts that cannot be mitigated.

A method statement for the removal and disposal of any asbestos which may be present on site (which as stated in project description statement is presently occupied by vacant factories which need to be demolished) is to be identified by applicant.

Applicant is also requested to carry out specific discussions with the various units within the Department for Environmental Health once the detailed plans for the canteens, the restaurant at the visitor centre and any other facilities (such as cooling systems, R.O. plants, solar energy, etc.) are prepared in view of specific regulations under the Food Safety Act and the Public Health Act.

**Appendix 2: Public Consultation comments submitted to EPD (21/12/07- 22/01/08)**

/	/	<p>With reference to your e-mail dated 16<sup>th</sup> June 2010 regarding subject indicated in caption and following review of the EPS submitted, please be informed that this Directorate would like to submit the following comments/recommendations regarding this proposed development :</p> <p><b>Air Quality and Climate Change</b></p> <p>All proposed mitigation measures regarding air pollution impacts including dust impacts during the construction phase, vehicular emissions and GHG emissions are to be strictly implemented by developer to mitigate adverse impacts on nearby sensitive receptors and institutions in particular Mater Dei Hospital and the proposed Oncology Centre.</p> <p>The proposal that for Phase 2 of the project, the CMP will include additional measures such as water dousing and reduced excavation activity during strong prevailing north westerly winds, so as to further mitigate potential dust impacts on Mater Dei Hospital and the proposed Oncology Centre, is highly recommended and should be implemented.</p> <p>Although as indicated in the EPS, quantification of operational emissions is not possible at this stage and the impacts of operational emissions are uncertain, any operational emissions that may have an adverse impact on public health should be taken into consideration and the necessary control measures taken in this regard.</p>
	<p>Adi Associates' Response dated 23rd July 2010:</p>	<p>Comments from the DEH are noted.</p> <p>The potential impacts from construction related emissions to air (including dust) can be controlled through a condition that the Full Development Permits for each Phase require submission and approval of a Construction Management Plan. This is considered to be the best mechanism to ensure compliance with construction site management regulations and the application of additional measures as recommended in the EPS.</p> <p>It is suggested that the development permit for the site includes a condition to require Malta Enterprise (or their managing agents) to ensure that on first occupation of each tenancy (and subsequent tenancies), the prospective tenant must secure an Operational Permit from MEPA. This is the best mechanism to ensure any machinery / equipment does not cause nuisance to neighbouring uses.</p>
/	/	<p><b>Noise and Vibration</b></p> <p>During the demolition, excavation and construction phase of the project, noise impacts on sensitive receptors have been considered as not significant while significance of noise impacts during the operational phase are uncertain. As such no mitigation measures have been proposed. In view of this, the necessary measures are to be taken by developer should noise impacts pose a nuisance.</p> <p>Regarding vibrations, all proposed mitigation measures are to be strictly implemented.</p>
	<p>Adi Associates' Response dated 23rd July 2010:</p>	<p><i>Noted.</i></p> <p><i>Making the approval of a Construction Management Plan (recommended as mitigation in the EPS) will help to ensure compliance.</i></p>
/	/	<p><b>Aquifer protection and Storm Water run-off</b></p> <p>All proposed mitigation measures including the installation of interceptors for pollution control during construction phases, the early construction of rain water reservoir and the</p>

		incorporation of SUD into Scheme are to be implemented thus reducing pollution, the incidence of water pooling and localized flooding during high intensity storms. Further consideration of storm water run-off during construction may be necessary for Phase 1 and 2 of the Project.
	Adi Associates' Response dated 23rd July 2010:	<i>Noted.</i> <i>These are matters for subsequent Full Development Permits for Phase 1 and Phase 2 of the Scheme.</i> <i>Arrangements for storm water run off during the construction period should be specified as part of the Construction Management Plan for each Phase.</i>
/	/	<b>Waste Management</b>  A Waste management strategy during the demolition and construction phases, including during excavation, and a waste management plan including monitoring during operations is to be implemented. With regards to removal and disposal of asbestos waste (from existing buildings) and any other hazardous waste which should be removed prior to demolition of the buildings, adherence to regulatory codes and procedures and due diligence is important in view of the health and safety of on-site workers and any adverse impacts on nearby sensitive receptors n particular Mater Dei Hospital.
	Adi Associates' Response dated 23rd July 2010:	<i>Noted.</i> <i>Issues relating to waste management during and after construction are identified in Chapter 4. Specific arrangements for waste and waste management will be included through subsequent Full Development Permit applications and Construction Management Plans.</i>
/	/	It is also recommended that pest control management, especially with regards to rodents on site and the surrounding areas be taken into consideration.
	Adi Associates' Response dated 23rd July 2010:	<i>Noted.</i> <i>MEPA should consider this as part of a requirement for subsequent Construction Management Plans.</i>
/	/	Applicant is also requested to carry out specific discussions with the various units within the Environmental Health Directorate regarding the canteen/catering facility, any food retail outlets and any other facilities (such as cooling systems, R.O. plants, solar energy, swimming pools, water features, etc.) in view of specific regulations under the Food Safety Act and the Public Health Act.
	Adi Associates' Response dated 23rd July 2010:	<i>Noted.</i> <i>The Applicant intends to manage the Life Science park with full adherence to all relevant operational permits as required by relevant public authorities / competent authorities. Further discussions are currently underway with the MHEC and the Applicant would welcome any specific discussions with regard to the requirements of the Department of Environmental Health.</i>
/	/	It is recommended that all proposed mitigation measures are to be strictly implemented by the applicant to mitigate any significant adverse health effects and nuisances on the Area of Influence including patients and staff at Mater Dei Hospital, proposed Oncology Centre, nearby residents, workers at San Gwann Industrial Estate and the general public. The possible health effects of any residual impacts that cannot be mitigated should also be taken into consideration.

		Moreover any other unpredicted impacts and nuisances which may arise from this project and that may have a significant adverse effect on public health should be immediately addressed by the applicant and the necessary mitigation measures taken. All relevant complaints lodged should be investigated and remedial action taken immediately.
	Adi Associates' Response dated 23rd July 2010:	<i>Noted.</i> <i>The Applicant is conscious of the sensitive nature of surrounding land uses such as the Mater Dei Hospital. Malta Enterprise will ensure the site is managed during and after construction in a responsible manner. The Applicant will comply with any relevant regulatory requirements and mitigation measures proposed in the EPS and conditioned as part of the PA01179/10 and subsequent permits.</i>
/	/	All complaints lodged and actions taken are to be recorded and such records are to be readily available to the Competent Authorities when requested. The necessary monitoring should also be carried out throughout all stages of the project.
	Adi Associates' Response dated 23rd July 2010:	<i>Noted.</i> <i>Aspects of monitoring complaints (during construction phases) could be incorporated into the relevant CMP for each Phase.</i>