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Bjorn Bonello
B.Sc. Hons. Environmental Planning (Birmingham, UK)

32, Perivoli
Triq Dun Ġuzepp Aquilina
Siġġiewi, SGW1770
Malta
+35699861907

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To whom it may concern

Environmental Assessment Unit
f/Director of Environment and Resources
Environment and Resources Authority
Hexagon House,
Spencer Hill,
Marsa MRS 1441

RE: PA 7844/17 Construction of five levels of Class 4A offices and a receded floor, and underlying levels (4) of basement parking, replacing a printing press

Dear Reader,

It has been brought to our attention that in terms of Air Quality parameters, consultants and ERA have come to an impasse. For this purpose, we have looked at the TIA prepared for this development and others, including the Planning Authority's own Trip Rate indicators for main land-uses. Together with the design team for the project we focused on the office areas with the development, exploring different alternatives, which resulted in a revision in plans.

From the outset, given that the discussion is on air quality, it is perhaps important to consider that the proposal replaces a printing press, which typically, a large fraction of the emissions is associated with exhausts from ink in the drying units (drier). Driers typically electricity to heat air. The warmed air passes over the substrate in the drier, causing the volatile compounds in the ink on the substrate to evaporate. The drier

exhaust air containing the volatilized solvents is contained in a duct and the air stream is vented to the atmosphere; the air stream may be directed to an air pollution control device (APCD) prior to venting to the atmosphere. Emissions that are not collected and routed to a duct or stack are called fugitive emissions. Fugitive emissions can come from several sources in a printing operation, such as ink feeding systems and the chill rolls. Vapor capture systems (e.g., ventilation hoods, floor sweeps, or enclosures) may be used to capture, contain, and exhaust the emissions from these sources (to an air pollution control device), thereby reducing the amount of fugitive emissions. Other sources of fugitive emissions include ancillary operations such as press washing (cleaning) and ink mixing operations. Air emissions from imaging include potential volatile components in the developer (e.g. alcohol) and fixer. Adhesives used in finishing operations such as laminating also may contain VOC and HAP and are a potential source of emissions. The four top toxic chemicals released, toluene, methyl ethyl ketone, xylene, and 1,1,1-trichloroethane, are all solvents of high volatility. By far the single largest toxic chemical used (released/transferred) by the printing industry is the solvent toluene; toluene comprises roughly 70 percent of the total chemicals released and transferred by the industry (in 1993). Toluene is used heavily in the gravure printing process as an ink solvent, but is also used throughout printing for cleaning purposes.

The printing equipment may include vapour capture systems, as part of the design and operation of the equipment, yet given the age of the printing press, this may not have been the case. In view of the above, the overall replacement building may be considered as a benefit which should not be underestimated.

Originally the proposal had 6 levels of office space (27,150m^2 offices) and underlying parking provision (772 car parking spaces -including 19 parking spaces of disabled persons). It will similar in nature to the developments in the area. Further revisions reduced the office floor space of 16,310m^2 (Table 1).

Table 1: - Proposed Development

Level	Type	Original	Revisions
Level -5	Parking Spaces	196 car parking spaces	196 car parking spaces
Level -4	Parking Spaces	192 car parking spaces	192 car parking spaces
Level -3	Parking Spaces	192 car parking spaces	192 car parking spaces
Level -2	Parking Spaces	192 car parking spaces	192 car parking spaces
Level -1	Offices	4,160m^2	2,400m^2 [1]
Level 0	Offices	3,850m^2	3,040m^2
Level 1	Offices	5,030m^2	3,040m^2
Level 2	Offices	5,060m^2	3,020m^2
Level 3	Offices	5,060m^2	2,310m^2
Level 4	Offices	3,990m^2	2,500m^2
Total		**27,150m^2 offices** **772 car parking spaces** **(including 19 parking spaces of disabled persons)**	**16,310m^2 offices** **772 car parking spaces** **(including 19 parking spaces of disabled persons)**

Noting that the trip generation figures were optimistic, we referred to and consulted a number of studies, some of which prepared by third parties and MEPA Circular 01/15 Transport Impact Assessments Trip Rate indicators for offices, which were much lower than the ones contained in this study and which competent authorities found to be acceptable.

In addition, it is perhaps important to note that, trips generated are not primary trips. In view of the context of the area and the relative proximity of competing opportunities, most trips will likely be non-primary trips, more specifically diverted trips, which already existing on the surrounding network and will not be added to the baseline figures. For the purpose of analysis only 25% trips have been considered to be non-primary, which is considered to be **a very conservative figure**. It is highly likely that trips generated by the development are already on the neighbouring road network. These non-primary

[1] Net Office Floor area

trips will therefore not load the junctions and links, in real terms, over and above the existing flows. Nor would they result in additional emissions over and above the baseline values.

The reason for this important distinction is that when estimating trips for each land use, not considering the different non-primary trips, would result in a gross overestimation of trips and impacts than will actually occur.

In determining the Annual Average Daily Traffic (AADT), the trips generated during the peak periods by the proposed development are drawn from the tables below.

For the original study, a number of developments in the immediate vicinity and other similar large-scale office developments within the same catchment area were surveyed to determine the trip generation from office developments. This data was coupled with data from the ITE[2] database for commercial office space and the following vehicular trip rates were drawn:

Table 2: Trip Rates for Office Developments

	Morning Peak Hour		Evening Peak Hour	
	Arrivals	**Departures**	**Arrivals**	**Departures**
Per 100m^2 of Rentable Office Space	2.26	0.25	0.54	2.17
Total trips during peak period	2.51		2.71	
	Weekend Peak[3]			
	Arrivals		**Departures**	
Per 100m^2 of Rentable Office Space	0		0	
Total trips during peak period	0			

[2] Trip Generation Manual, Revised May 2003, Institute of Transport Engineers.

[3] Offices closed during weekends.

Table 3: Traffic Generation of Proposed Office Aspect of Development during the PEAK PERIODS

PROPOSED DEVELOPMENT				
	Morning Peak Hour		Evening Peak Hour	
	Arrivals	Departures	Arrivals	Departures
27,150m^2 Rentable Office Space	614	68	147	589
Total trips during peak period	682		736	
	Weekend Peak			
	Arrivals		Departures	
27,150m^2 Rentable Office Space	0		0	
Total trips during peak period	0			

Using trip figures used in third party reports for large large-scale office developments the following vehicular trip rates were drawn (Table 4 and 5):

Table 4: Trip Rates for Office Developments used in PA1191/05

	Morning Peak Hour		Evening Peak Hour	
	Arrivals	Departures	Arrivals	Departures
Per 100m^2 of Rentable Office Space	1.6	0.1	0.1	1.25
Total trips during peak period	1.7		1.35	
	Weekend Peak			
	Arrivals		Departures	
Per 100m^2 of Rentable Office Space	0		0	
Total trips during peak period	0			

Table 5: Traffic Generation of Proposed Office Aspect of Development during the PEAK PERIODS

PROPOSED DEVELOPMENT				
	Morning Peak Hour		Evening Peak Hour	
	Arrivals	Departures	Arrivals	Departures
27,150m² Rentable Office Space	434	27	27	339
Total trips during peak period	461		366	
	Weekend Peak			
	Arrivals		Departures	
27,150m² Rentable Office Space	0		0	
Total trips during peak period	0			

Comparing Table 3 with Table 5, using the original floorspace areas, immediately reveal a stark difference, between using different trip rates, indicating that the ones used in the original study, were high. They were even higher than MEPA's own thresholds. In the interest of a more balanced view, the lower trip generation rates have been used on the **revised figures**, and the resultant trip generation are given below (Table 6).

Table 6: Traffic Generation of Proposed Office Aspect of Development during the PEAK PERIODS

PROPOSED DEVELOPMENT				
	Morning Peak Hour		Evening Peak Hour	
	Arrivals	Departures	Arrivals	Departures
16,310m² Rentable Office Space	261	16	16	204
Total trips during peak period	277		220	
	Weekend Peak			
	Arrivals		Departures	
16,310m² Rentable Office Space	0		0	
Total trips during peak period	0			

The net impact from the trips generated after subtracting the trips of the existing printing press from the traffic being generated from the proposed office development traffic is therefore:

Table 7: Net Trips Generated by proposed development

	Morning Peak Hour		Evening Peak Hour	
	Arrivals	**Departures**	**Arrivals**	**Departures**
Proposed Development – Existing Development	233	13	10	179
Total trips during peak period	246		189	
	Weekend Peak			
	Arrivals		**Departures**	
Proposed Development – Existing Development	(-12)		(-13)	
Total trips during peak period	(-25)			

In the interest of a robust analysis the role of non-primary trips is being limited to 25%, although as mentioned earlier, the strategic position of the site along the arterial road network, makes it virtually impossible that most of the commuters to the development are not already using the neighbouring road network.

Modal split in favour of public transport/walking/cycling is being considered at 10% of all trips made to the site. The applicant is committed to encourage sustainable travel through a number of initiatives and through the possible increase in public transport services and upgrading of pedestrian footways in the area. A holistic strategy for upgrading the Triq il-Mitħna corridor that would have a very positive effect on pedestrian safety and road safety in general as outlined previously.

Table 8: Net Vehicle Trips Generated by proposal (Net of non-Primary Trips and Modal Spilt)

	Morning Peak Hour		Evening Peak Hour	
	Arrivals	**Departures**	**Arrivals**	**Departures**
Rentable Office Space	152	9	7	116
Total trips during peak period	161		123	
	Weekend Peak			
	Arrivals		**Departures**	
Rentable Office Space	0		0	
Total trips during peak period	0			

With the original proposal, it was assumed that currently, Triq il-Mitħna has an Annual Average Daily Traffic (AADT) of about 34,000 (factored from peak hour and based on historic data collected by the author) and as a result of the development would have originally contributed to an increase of about circa 4% (1,360 tips), in primary trips.

With reference to the information above, contextual realities, historic traffic counts (between the period 2015-2018), development type, and from the analysis carried out it was determined that the **revised proposal**, would have a contribution to the Annual Average Daily Traffic (AADT) on the adjacent roads of about **910 trips**

Please do not hesitate to contact the undersigned should you require any further information or clarifications on the above.

Thank you in advance,

Regards,

Bjorn Bonello

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