Environment and Resources Authority

Application for an Environmental Permit

Address: Environmental Permitting Unit
Environment and Resources Authority
, Hexagon House, Spencer Hill Marsa.
MRS 1441. Malta.
Telephone: 2292 3500

Form 1 - Please complete in block letters. The requested information must be completed in full. Failure to provide adequate information will delay processing of the application.

(For office use only)
Date application and stamp:

D	D	M	M	Y	Y

(For office use only)
Reference Number:

						Y	Y

Proposed Activity

Batching of concrete on site.

No processing of material.

(refer to section 3.1)

Location of Proposed Activity

Property name	'Batch Plant'
Street	Triq ir-Ramla
Locality	Maghtab
Local Council	Naxxar

Personal details of applicant or contact person:

[redacted] [redacted]

Address:

[redacted]

Town: [redacted]

Postal Code: [redacted]

Telephone Number: [redacted]

Fax: [redacted]

Mobile: [redacted]

E-mail: [redacted]

ID card number: [redacted]

VAT number: [redacted]

NACE code: [redacted]

(VAT number and NACE code are to be included where available).

Details of company or institution on behalf of which the application is being made:

[redacted]

Address:

[redacted]

Town: [redacted]

Postal Code: [redacted]

Telephone Number: [redacted]

Fax: [redacted]

Mobile: [redacted]

E-mail: [redacted]

VAT number: [redacted]

NACE code: [redacted]

Company registration number: [redacted]

Attach supplementary forms as indicated in the boxes below

Titles of supplementary forms, site plans and documentation	Attachment Number
Site plan showing location of facility	1
Site layout plan showing main site features and locations of raw materials, products and waste	2
Process flow diagram	3
Curriculum vitae of company representative responsible for environmental issues	4
Site layout showing discharge points of effluent and emissions to atmosphere	5
Annex E - Report on Generator Set	6
Annex 1 - AN/G01	7
Annex F - Calculation on rated thermal input MWth	8

Applicant's declaration

I apply for the environmental permit as indicated above, and declare that, to the best of my knowledge, all the information contained in this application and on the submitted plans and documentation is correct.

[redacted] [redacted] 5th June 2019

Signed On behalf of/in my own name (in block letters) Date

PLEASE READ THE FOLLOWING BEFORE SIGNING - Data Protection Clause

In terms of the Data Protection Act (Chapter 440 of the Laws of Malta), we will process any personal and/or sensitive data supplied on/in this application, request or notification form or subsequently supplied by yourself, whether orally or in writing, for all or any of the following:

1. The proper processing of your application, request and/or notice as submitted;
2. Preventing, detecting and/or prosecuting fraud and any other criminal activity which the Authority is bound to report and/or act upon whilst meeting any other specific legal or regulatory obligations;
3. Establishing, exercising or defending any legal action;
4. Internal management, research and statistics, systems administration, the development and improvement of our services;
5. The protection and promotion of our legitimate interests and the proper conduct of our obligations arising under any law or statutory instrument; and
6. To make public the necessary information as specified in the relevant law and/or instrument.

Relevant data will be disclosed or shared as appropriate with all our employees and with other third parties if pertinent to any of the purposes listed above.

Every field on the form is mandatory. Should you fail to fill in any mandatory field, we reserve the right to refuse the application. Should any field be inapplicable to your particular circumstances please mark that field with the letters "N/A".

You have the right to require that we provide you with access to your personal data as well as the right to rectify, or, in appropriate circumstances, erase/edit any inaccurate, incomplete or immaterial personal data which is being processed. However, you are required to inform us immediately of any alterations relating to your personal data which we are processing.

By signing this form, you confirm that you are giving your explicit consent, in terms of the Data Protection Act, on behalf of yourself and all the other persons specified in this form for the Authority to process your respective personal information as outlined above and you confirm that you have brought this Data Protection notice to the attention of these other persons and obtained their respective consents.

We undertake to implement appropriate measures and safeguards for the purpose of protecting the confidentiality, integrity and availability of all data processed.

This form is to be completed by all applicants for an environmental permit. As an environmental permit is applicable to companies in a range of activities some of the questions may not be relevant to a specific enterprise, in which case "N/A" should be inserted. ERA reserves the right to request additional information, including analysis of specific emissions or wastes, after examination of this Form or after a site visit by ERA staff. The applicant must also attach appropriate maps etc. to this application document, as requested in certain sections below. If there is not sufficient space to include all relevant details, please attach further referenced annexes or expand the digital version of the application as necessary.

The Environment and Resources Authority (ERA) should be provided with one (1) hard copy of the application form as well as one (1) copy in digital format. A signed copy of the form must be posted to ERA at the above address. Please complete the form and appendices by typing or with block letters. Incomplete forms will result in delays in the processing of the application.

Section 2 – Definition of site and Development Permit

2.1. Show the location of the site on a site plan of appropriate scale, as Attachment 1. Site plans may be downloaded from the Map Server on the ERA website (www.pa.org.mt) or can be purchased through the PA Mapping Shop. The site plan should:

- Include an A4 or A3 sized plan;
- Be of a scale of 1:10,000 or 1:2,500 as appropriate;
- Show all existing development within 250 metres of the boundary site including all roads and buildings; and
- Indicate in red the outline of the proposed site including all necessary infrastructure (existing and/or proposed), such as site access roads.

2.2 List relevant development (planning) permits and any pending development applications on site quoting permit/application number. Sites where activities predate the Development Planning Act (2001) should attach an equivalent permit (e.g. PAPB permit) for the activity on site.

Development permit/application number:
PA/0862/96
PA/11215/18
PA/5796/98

2.3. Provide, as Attachment 2, an A3 sized (or larger) site layout plan showing the location and nature of major site features and activities.

All plans submitted, as part of any application, must bear a unique number, and be dated and signed by the applicant.

Section 3 – Site Activities and Management

3.1. Describe the main activities carried out on the site.

Batching of concrete on site, staging of construction activities, and products.
This includes deposition of aggregate material, cement on site and dispatch of finished products, storage and maintenance of construction related vehicles, and steel bar bending.
Site cleaning will be carried out, which includes washing of heavy vehicles and removal of dust deposits onto the site.
Collection of waste residues and effluents from filtered wastewater, such as oil/grease/fuel effluents.
Fuel/oil storage on site from vehicle maintenance and into generator.
Testing of concrete products on site.
No toxic chemicals will be used on site for the proposed activities.
Office related activities and parking of vehicles on site.
No other activities not mentioned above take place, such as vehicle mechanical repairs not related to vehicles owned by TMC, refuelling of trucks or spray painting etc.

No screening or crushing of material takes place.

3.2 Number of installation's employees.

Number of employees	Tick as applicable
Up to 10	X
11 - 50	
51-100	
More than 100	

3.3. Kindly provide, as Attachment 3, an outline flow diagram illustrating the major process steps, the input of raw material, the output of product and the associated points of generation of significant emissions and waste. ***(See PDS Report)***

3.4 Contact details of company representative responsible for environmental issues.

Name: [redacted]
Mobile: [redacted]
E-mail: [redacted]

The site must be managed by persons who are technically competent to carry out the proposed activity. Information on qualifications, experience and technical competence of the company representative responsible for environmental issues must be submitted (kindly attach the relevant curriculum vitae as Attachment 4. Information on whether any professional or technical training is to be provided to the site operators should also be included.

3.5 Please indicate whether records are kept for various processes within the site (where applicable).

Records kept	Yes/No
Operational procedures (standard operational procedures, quality assurance, etc.)	
Maintenance records	
Staff training	
Incidents on site	
Recording of environmental performance	
Complaints	

Movements of waste on and/or off the site	

3.6 Kindly indicate Environmental Management System (EMS) in place as per table below:

Type of EMS	**Yes/No**
EMAS	
ISO 14001	
In - house	
None	**X**

Section 4 – Storage, Raw material Usage and Equipment

This section details the information required regarding raw materials used on site.

4.1 List the main raw materials used on site in quantities greater than 1 tonne per year, and methods of storage (drums, bulk tank, etc.). Also label on the site layout plan (Attachment 2) the location of storage areas as per the location codes below.

Location Code	Raw material	Maximum amount stored at any one time	Method of storage and containment
RM1	Cement	100 m^3	Cement silos brought on site by road tankers. (May include ad mixtures)
RM2	Aggregates / Sand	100 m^3	Storage Bins
RM3	Steel	320tons	Tied together with bands in bundles and laid on surface floor
RM4	Rain Water	144 m^3	Underground Reservoir, rainwater from roofs of buildings. Used for concrete production.
RM5	Recycled Water	110m^3	Recycled water in underground reservoir from vehicle and surface washing, including surface rainwater runoff. Containers made from double walls & bottoms, in reinforced concrete. Used for concrete production.
Continue as required			

4.2 Fuel oil: Specify type, maximum amount stored and storage arrangements (including protection against spills). Also label on the site layout plan (attachment 2) the location of storage areas as per the location codes below. Locations of any on-site fuelling areas (FA1, FA2, etc) and/or vehicle maintenance areas (VM1, VM2, etc.) must also be marked.

Location Code	Fuel type	Maximum amount stored at any one time	Annual consumption	Use (e.g. for generator, boiler, vehicles[1])	Method of storage and containment (bunds, spill kits, etc.)
F1	Diesel*	715 litres	3,000 litres	Generator	Stored directly into generator
F2	Oil*	26 litres	26 litres	Generator	Stored directly into generator
VM1	n/a	n/a	n/a	Vehicle Maintenance	VM Workshop with drums (200L) placed over spill pallet (220L)**
VM2	n/a	n/a	n/a	Vehicle Maintenance	VM Workshop with drums (200L) placed over spill pallet (220L)**

*no fuel or oil will be stored on site for refuelling purposes. **VW maintenance include waste vehicle parts, tyres, fuel/oil/lubricants replacement, & washing. Oil/fuels/lubricant liquids from VM will be temporary stored in drums with HDPE spill pallets.

[1] Please indicate vehicles' use of fuel only where vehicles are filled on site (not at off-site petrol stations).

4.3 Chemicals: this section must be completed for any chemical whose annual uses exceeds one tonne. For each chemical provide name, CAS number, risk phrases, quantity used annually, maximum amount stored on site. Indicate the storage location on the site layout plan (Attachment 2) of storage as per the location codes below.

Information must be submitted on any mitigation measures to be adopted in order to minimise emissions and hazards arising within the chemical/ raw material, so as to ensure that adequate protection for human health and the environment is provided. Information on monitoring procedures to be adopted should also be included. Documented emergency procedures which will be adopted should the need arise should also be included. MSDS sheets (Material Safety Data Sheets) for these chemicals should be submitted with the completed application form.

Location Code	Chemical	CAS Number										Risk Phrases	Maximum amount stored at any one time	Annual consumption [1]	Mitigation and monitoring procedures
C1	Viscocrete			2	6	5	3	0	2	0	1	(see MSDS)	2,000L	-	Safety glasses, impervious gloves, protective clothing, mouth respirators
C2															
C3															
C4															
C5															
C6															
C7															
Continue as required															

[1] If you consider any of these amounts to be commercially confidential, please submit this information as one of the following ranges: 1-10 tonnes, 10-100 tonnes, 100-1000 tonnes, >1000 tonnes.

4.4 Toxic chemicals: This section must be completed **only** if the company stores/utilises/produces chemicals with the following risk phrases/ Hazardous codes (**irrespective of the annual consumption**)

R phrase	Description	H Code	Description
R40	Limited evidence of a carcinogenic effect	**H 340**	May cause genetic defects
R45	May cause cancer	**H 341**	Suspected of causing genetic defects
R46	May cause heritable genetic damage	**H 350**	May cause cancer
R49	May cause cancer by inhalation	**H 350i**	May cause cancer by inhalation
R60	May impair fertility	**H 351**	Suspected of causing cancer
R61	May cause harm to the unborn child	**H 360D**	May damage the unborn child
R68	Possible risk of irreversible effects	**H 360F**	May damage fertility

Indicate the storage location on the site layout plan (Attachment 2) of storage as per the location codes below. Please list the "risk products" and the quantity used, below or in an attached document:

Location Code	Chemical	CAS Number	Risk Phrases	Maximum amount stored at any one time	Annual consumption	Mitigation and monitoring procedures
TC1	N/A	N/A	N/A	N/A	N/A	N/A
TC2						
TC3						
TC4						
TC5						
TC6						
TC7						
Continue as required						

4.5 Ozone depleting substances and Fluorinated greenhouse gases: Equipment with a fluid charge of 3 kg or more should be registered using the table below.

Equipment code	Type of equipment [1]	Use [2]	Charge (kg)	Type of substance [3]
EQ1	N/A	N/A	N/A	N/A
EQ2				
EQ3				
EQ4				
EQ5				
Continue as required				

[1] Hermetically-sealed systems, fixed systems or mobile systems
[2] Firefighting, refrigeration/air-conditioning or high-voltage switchgear
[3] E.g. R22, R407c, R134a

Section 5 – Waste Management

This section details the information required regarding wastes generated or processed on site.

5.1 List the wastes generated or processed on site, giving the EWC (European Waste Catalogue) Code, the maximum storage capacity on site, method of processing and/or disposal, and methods of storage and containment (drums, bulk tank, vats, etc.). Also label on the site layout plan (Attachment 2), the location of storage areas as per the location codes below.

Location Code	Type of Waste	EWC code *(from Commission decision 2000/532/EC establishing a list of wastes)*						Quantity (maximum site capacity)	Method of processing and/or disposal	Method of storage and containment
WM1	Waste concrete and concrete sludge	1	0	1	3	1	4	30m^3	Recycled/Disposed by contractor	Skips
WM2	Waste not otherwise specified	1	0	1	3	9	9	30m^3	Recycled/Disposed by contractor	Skips
WM3	Waste not otherwise specified	1	0	1	2	9	9	30m^3	Recycled/Disposed by contractor	Skips
WM4	Particulates and dust	1	0	1	2	0	3	30m^3	Recycled/Disposed by contractor	Skips/Stockpiling
WM5	Sludge from onsite effluent treatment	1	0	1	2	1	3	-	Disposed by contractor	Wastewater Tank/Sump
WM6	Municipal wastes not otherwise specified	2	0	0	3	9	9	-	Recycled/Disposed by contractor	Drums
WM7	Oil filters	1	6	0	1	0	7*	-	Disposed by contractor	-
WM8	End-of-life-tyres	1	6	0	1	0	3	-	Recycled/Disposed by contractor	-
WM9	Brake Pads	1	6	0	1	1	2	-	Recycled/Disposed by contractor	-

WM10	End-of-life vehicles	1	6	0	1	0	4	-	Recycled/Disposed by contractor	-
WM11	Brake Fluids	1	6	0	1	1	3*	400L	Recycled/Disposed by contractor	220L Spill pallets
WM12	Lead Batteries	1	6	0	6	0	1*	-	-	-
WM13	Mineral-based chlorinated engine, gear and lubricating oils	1	3	0	2	0	4*	400L	200L drums, Recycled/Disposed by contractor	220L Spill pallets
WM14	Mineral-based non-chlorinated engine, gear and lubricating oils	1	3	0	2	0	5*	400L	200L drums, Recycled/Disposed by contractor	220L Spill pallets
WM15	Synthetic engine, gear and lubricating oils	1	3	0	2	0	6*	400L	200L drums, Recycled/Disposed by contractor	220L Spill pallets
WM16	Other engine, gear and lubricating oil	1	3	0	2	0	8*	400L	200L drums, Recycled/Disposed by contractor	220L Spill pallets

All transfers of waste are to be consistent with the requirements of Subsidiary Legislation 549.63 and shall make use of waste carriers registered with ERA under Subsidiary Legislation 549.45. All exports of waste are to follow Regulation (EC) 1013/2006 of the European Parliament and of the Council of 14th June 2006 on shipments of waste and further amendments.

5.2 Where wastes are being treated or disposed on site, details regarding treatment or processing are to be attached as a separate annex, providing the basic specifications of equipment being used. Location of such equipment is to be indicated on the site layout plan, Attachment 2.

*note: GBR numbers will be provided in due course.

Section 6 – Discharge of Effluent

6.1. Describe in the table below which types of effluents arise on site (excluding domestic sewage discharged to sewer and stormwater), how they are treated and where they are discharged to (e.g. sewer, sea, land). The discharge point to sea is to be indicated and geo-referenced on a separate site layout plan (Attachment 5), as per the location codes below.

Effluent Location Code	Origin	Composition	Maximum volume (m^3/day)	On site / Away from the site[1]	Treatment (prior to discharge)	Geo-referenced coordinates for discharges to sea only
E1	Vehicle maintenance, & oil/water separator	Oil/fuels mixed with water	15	On site	Filtered in waste water tank with oil/water interceptor (9.5m^3 capacity)	35°56'8.98"N 14°26'36.55"E
E2	Surface runoff	Particulate matters/cement/sand	-	On site	Settling tanks (45m^3 capacity)	N/A
E3	Escapees into water runoff	Cement sludge	-	On site	Filtered (settling tank/sump)	N/A
E4						
E5						
Continue as required						

6.2 Number of Sewer Discharge Permit from the Water Services Corporation (WSC) | N/A

6.3 Describe how rainwater is handled on site. Also attach a site drainage map indicating rainwater capture and harvesting/discharge as part of Attachment 5.

By evapotranspiration and natural ground percolation. Existing reservoir to store clean rainwater runoff from roofs to be used for concrete production. Waste

[1] Eg. via underwater pipeline

water filter tanks and reservoir are proposed on site with oil / water separator and settling tanks for ground surface runoff. Recycled water RM5 will be stored in reservoirs and used for concrete production. Water demand is 1.15m^3/day, whilst wastewater output is 0.88m^3/day, concrete production uses 50-210m^3/day.

Section 7 - Emissions to Atmosphere

Information should be provided on the nature and quantities of any foreseeable emissions from the site into the air; such emissions should include gaseous emissions, as well as emissions of dusts, fibres and particulates. Information must also be submitted on any mitigation measures to be adopted in order to minimise the nuisances and hazards arising within the facility, so as to ensure that adequate protection of human health and the environment is provided. Information on monitoring procedures to be adopted should also be included, as should documented emergency procedures which will be adopted should the need arise.

7.1 Point source emissions to atmosphere from process or related activities: The location of significant point sources (eg. Stacks from boilers/generators, vents, etc.) should be shown on the site layout plan (Attachment 5) as per the location codes below. Possible sources of odour should also be included.

Emission Location Code	Source of emission	Content of emission	Treatment/abatement	Stack height (m)[1]
PS1	Concrete Batching Silo 1	PM / PM10	Shrouds, Conveyor Belts Cover, Rubber linings / Cover	/
PS2	Concrete Batching Silo 2	PM / PM10	Shrouds, Conveyor Belts Cover, Rubber linings / Cover	/
PS3	Generator	CO / VOC / CO2/ CH4 / N2O	Catalytic convertors	2.5 m
PS4				
PS5				

7.2 Boilers/Generators: For each boiler/generator give the rated thermal input, power output, type of fuel, and height of discharge point[1]. Also show the location of boilers (B1, B2, etc.) and generators (G1, G2, etc.) on the site layout plan (Attachment 5).

Generator G1
Total net thermal power input*: 0.671 MW_{th},*
Fuel: Diesel
Power output: *315KVA*
Stack height: 2.5m

[1] Height above the last habitable floor within a 25 metre radius.

7.3 Non-point sources: Describe the origin of each significant diffuse emission, its nature and composition, and means of control (if any). Issues regarding odour should also be included. Show the location of significant non-point sources on Attachment 5, making reference to the source of the emission.

Water run-off on site. Typically polluted with cement and sand affluent. Water is filtered by Sedimentation, Evapotranspiration and Ground Percolation on site. Site surface is covered with cement to prevent hazardous substances leaking to the ground below the surface. Excavated pits on site are used to collect water run-off for sedimentation. Waste water with oil / grease etc. will be stored and filtered on site by the proposed waste water storage reservoir. Dust emissions in the form of PM10.

7.4 Describe any source of significant amounts of noise, detailing abatement measures applied.

Operating vehicles and materials movements on site during batching and other related construction activities. All equipment and materials must be provided with silences and noise suppression devices, such as catalytic convertors, engines must be covered as well as aggregates on site. Siting of buildings on site serve as a measure to attenuate noise. Vehicles should not left to operate at high revs needlessly.

Section 8 – Miscellaneous issues

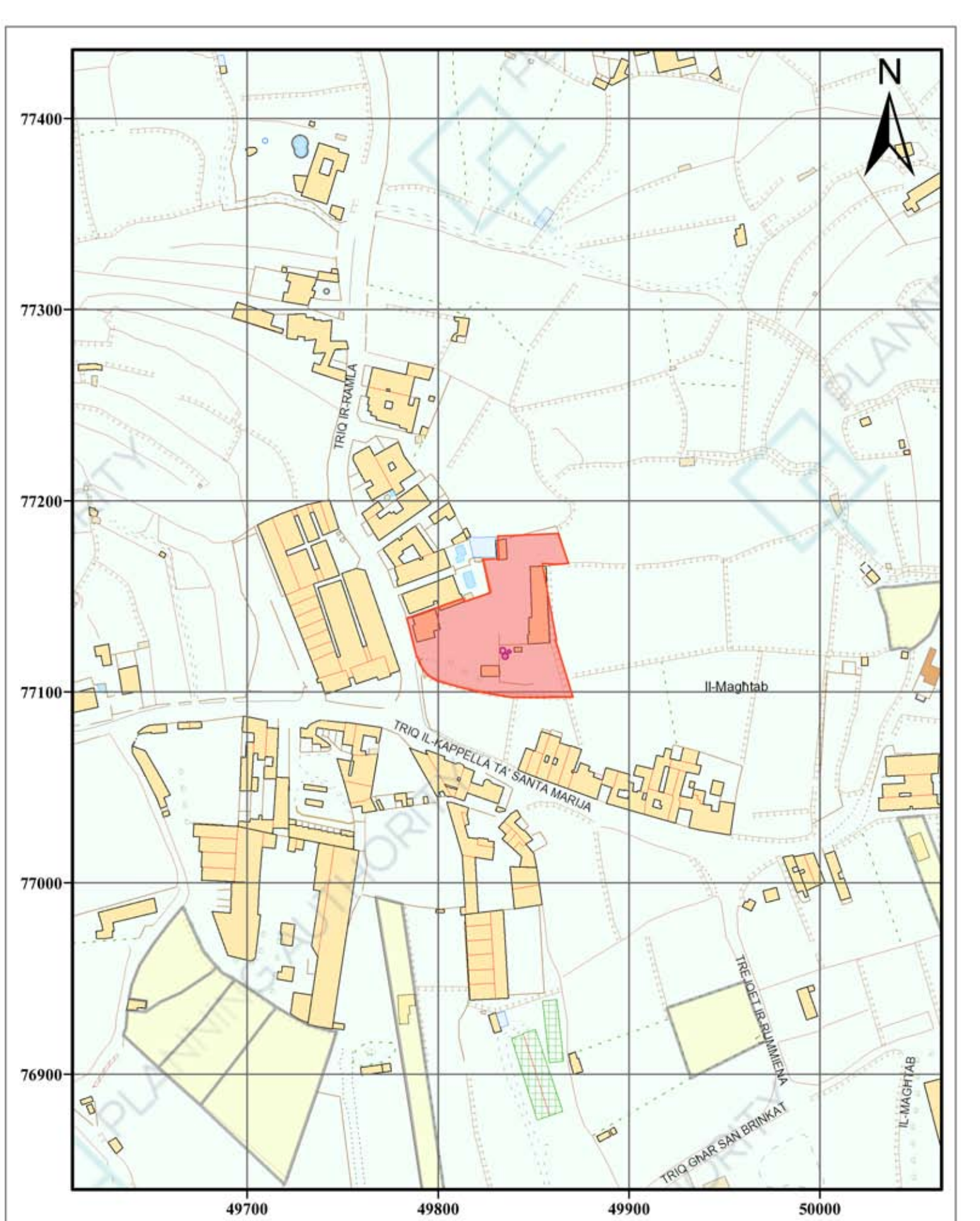
8.1 Describe controls in place for the issues listed in the table below.

Issue	Control measure
1 Litter and windblown materials	Collected into appropriate storage bins, covering of material, site cleaning.
2 Birds and scavengers	Noise control measures, fencing.
3 Pests	Cleaning of site, appropriate storage of waste.
4 Site security measures	Perimeter fencing and boundary walls.
5 Contingency against fire	Handheld fire extinguishers, equipment stored at appropriate locations.

Section 9 – Funding

Please ensure that the following are clearly marked:

EU Funded applications (yes/no)	**NO**
If applicable indicate EU Funding instrument	**N/A**



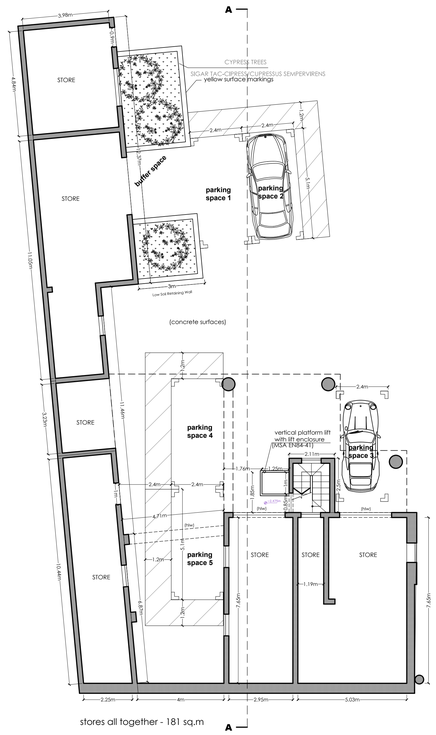
Meters

0 25 50 100 150 200 250

1:2,500 **Date Printed: 20/09/2018**

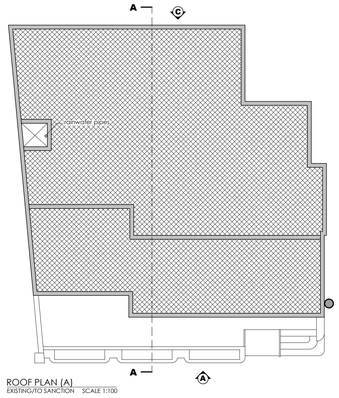
Public Geoserver

PLANNING AUTHORITY
St.Francis Ravelin, Floriana.
Tel: +356 2290 0000, Fax: +356 2290 2295
www.pa.org.mt, mappingshop@pa.org.mt

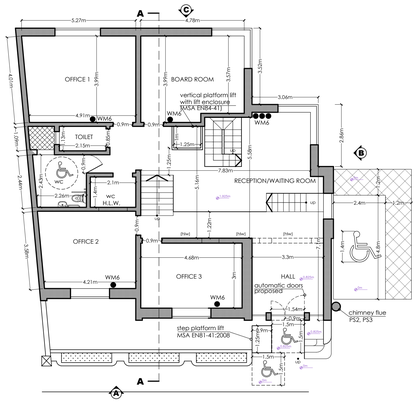


stores all together - 181 sq.m

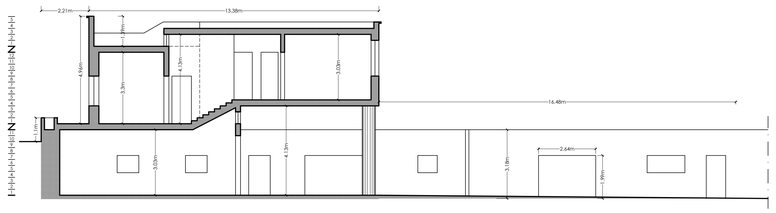
BASEMENT (A)
APPROVED as per PA/11215/18 SCALE 1:100



EXISTING/TO SANCTION SCALE 1:100



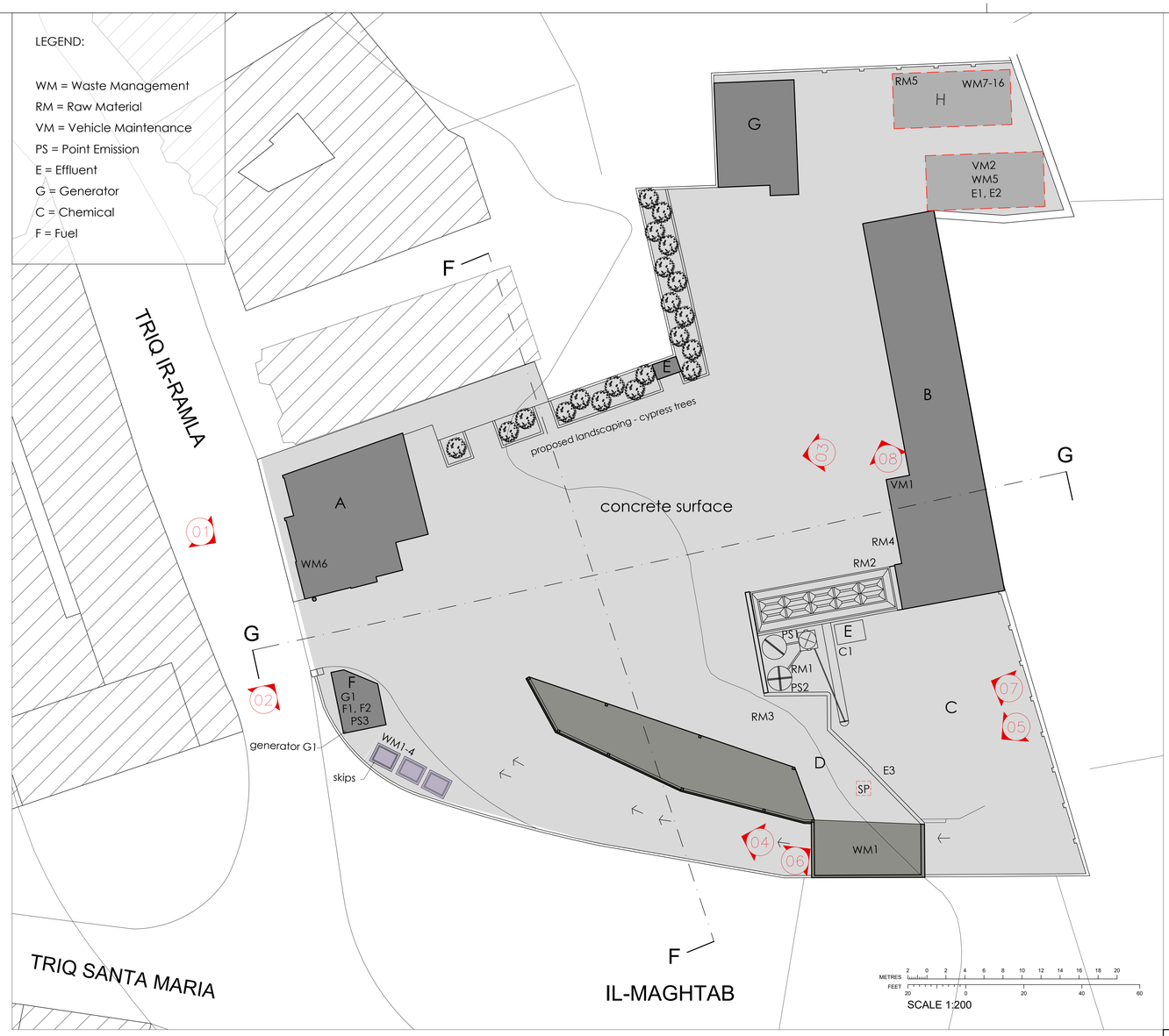
GROUND FLOOR (A)
APPROVED as per PA/11215/18 SCALE 1:100



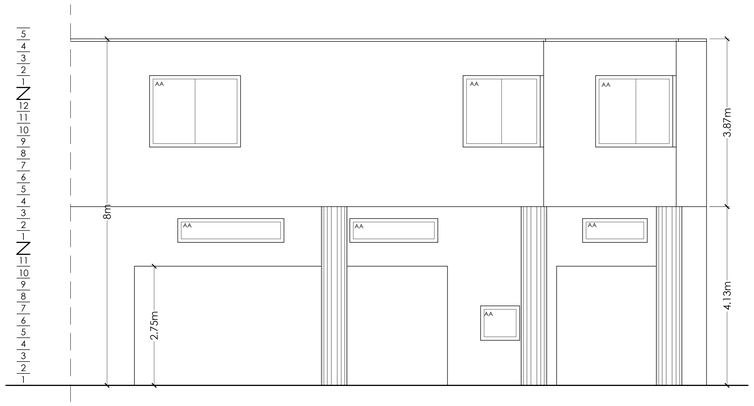
SECTION AA
APPROVED as per PA/11215/18 SCALE 1:100

LEGEND:

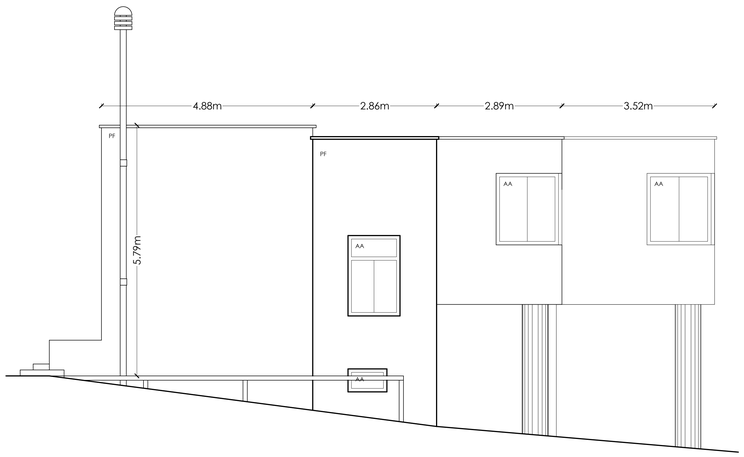
WM = Waste Management
RM = Raw Material
VM = Vehicle Maintenance
PS = Point Emission
E = Effluent
G = Generator
C = Chemical
F = Fuel



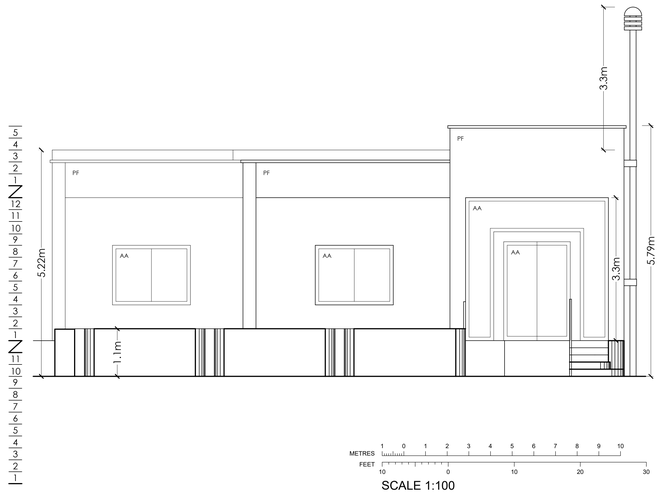
Block Plan
APPROVED as per PA/11215/18 / EXISTING SCALE 1:200
(CLEAN COPY)



ELEVATION C
APPROVED as per PA/11215/18 SCALE 1:50



ELEVATION B
APPROVED as per PA/11215/18 SCALE 1:50



ELEVATION A
APPROVED as per PA/11215/18 SCALE 1:50

METRES
FEET
SCALE 1:100

METRES
FEET
SCALE 1:50

LEGEND:

PF - paint finish
AA - aluminum apertures

Revisions

Ref.	Item.	Init.	Date.
01	Amendments as per AIS Report	KF	13/05/26

[redacted]

Path:

File No.: 97115

Dwg No.: 97115-A0(01)

Scale: 1:100, 1:50

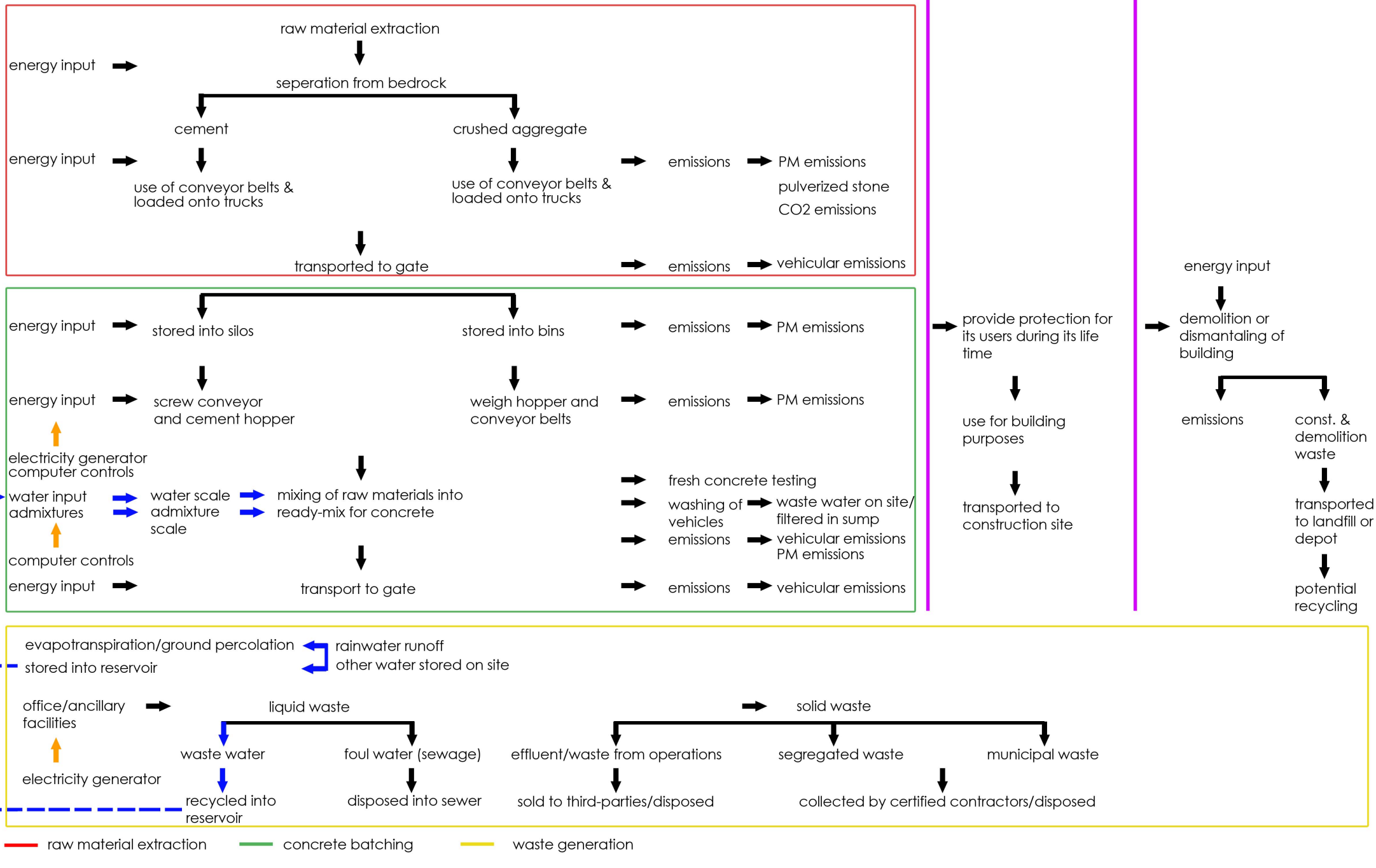
Date: 29.07.2020

Drawn by: mv

Checked:

Process Flow Chart

Manufacturing Phase - Ready-Mix Concrete



Use Phase

provide protection for its users during its life time

use for building purposes

transported to construction site

End-of-Life

energy input

demolition or dismantaling of building

emissions

const. & demolition waste

transported to landfill or depot

potential recycling

[redacted]

Date: 9th June 2026 YOUR REF: N/A

OUR REF: Pth-TMC 01-0626

TO WHOM IT MAY CONCERN

Subject: Thermal power input fixed backup generator at Tal-Maghtab Construction, Triq Santa Marija - Maghtab

Scope:

The scope of this report is to calculate the thermal power input of the fixed plant located at the above premises.

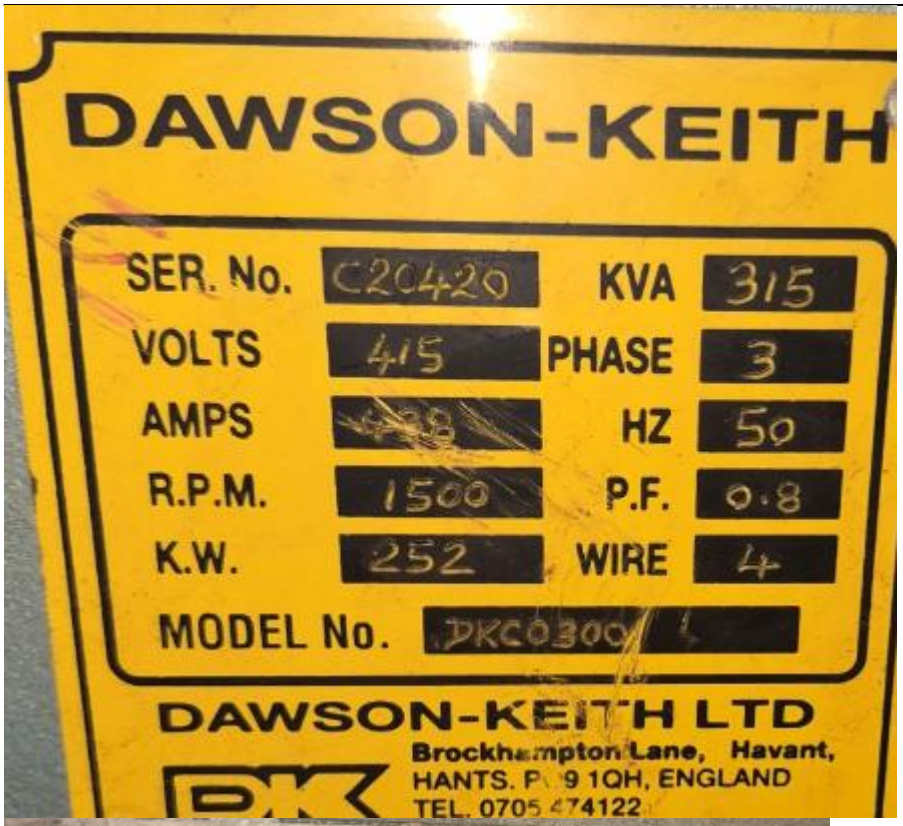
The plant is a fixed crusher operating with a CUMMINS engine as indicated below.

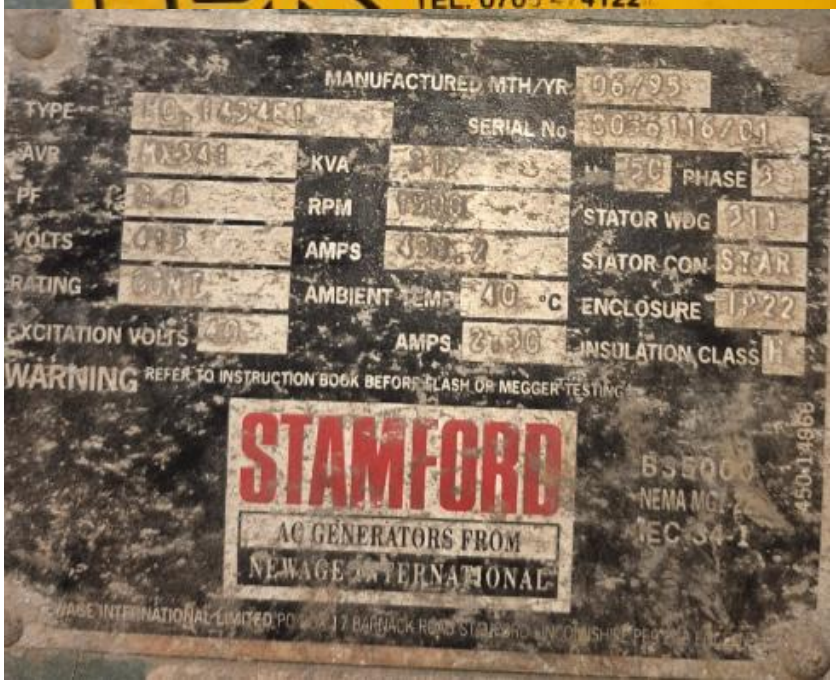
The plant is powered by liquid fuel engines – Diesel.

PLANT A – MOBILE CRUSHER ENGINE

Make:	DAWSON KEITH
Model:	DKC0300
Serial No.:	C2C420
Nominal Power:	250 KW
Fuel Consumption:	68.8 l/hr

[redacted]


DAWSON-KEITH
SER. No. C20420
KVA 315
VOLTS 415
PHASE 3
AMPS 438
HZ 50
R.P.M. 1500
P.F. 0.8
K.W. 252
WIRE 4
MODEL No. DKC0300
DAWSON-KEITH LTD
Brockhampton Lane, Havant,
HANTS. PO9 1QH, ENGLAND
TEL. 0705 474122


MANUFACTURED MTH/YR
TYPE
SERIAL No
AVR
KVA
PHASE
PF
RPM
STATOR WDG
VOLTS
AMPS
STATOR CON
RATING
AMBIENT
ENCLOSURE
EXCITATION VOLTS
AMPS
INSULATION CLASS
WARNING REFER TO INSTRUCTION BOOK BEFORE FLASH OR MEGGER TESTING
STAMFORD
AC GENERATORS FROM
NEWAGE INTERNATIONAL
NEMA MG
IEC 34-1

[redacted]

PERFORMANCE DATA

Turbocharged-Aftercooled

Rating Level	E			D			
Rated rpm	2200			2200			
Engine Power@rpm	335 bhp (250 kW)			330 bhp (249 kW)			
rpm	2200	1800	1500	2200	1800	1500	2
bhp	335	331	317	330	318	300	
lb/hp-hr	.380	.358	.339	.381	.357	.349	
gal/hr	18.2	16.9	15.3	18.0	16.2	14.9	
kW	250	247	236	249	240	226	
g/kW-hr	231	218	206	232	217	212	
L/hr	68.8	64.1	58.0	68.1	61.3	56.5	

Based on maximum flow rate

Rated Thermal Input:

Pth = be(r) * Pm(r) * Hu / 3.6

Where Pth = thermal input power (kW)

be(r) = Brake specific fuel consumption at rated power (kg/kWh)

Pm(r) = rated mechanical power (kW)

Hu = Lower heating value of fuel

Fuel consumption = 68.1 L/h

uel type: Diesel

- **Density of diesel** $\rho = 0.832\,\text{kg/L}$(typical)
- **Lower Heating Value (LHV)** of diesel = 42.7 MJ/kg

Convert fuel consumption to mass flow rate

$\dot{m} = 68.1\,\text{L/h} \times 0.832\,\text{kg/L}$

$\dot{m} = 56.6592\,\text{kg/h}$

Convert to **kg/s**:

$$\dot{m} = \frac{56.6592}{3600} = 0.01574\,\text{kg/s}$$

Calculate the thermal power input

[redacted]

$\dot{Q}_{in} = \dot{m} \times \mathrm{LHV}$

$\dot{Q}_{in} = 0.01574\,\mathrm{kg/s} \times 42.7 \times 10^{6}\,\mathrm{J/kg}$

TOTAL NET THERMAL POWER INPUT 0.671 MW.

NAME AND SURNAME OF PERSON

PERFORMING INSPECTION

[redacted]