

PROPOSED ASPHALT PLANT FOR MR.  
JUNIOR LESLIE, ALCAR CONSTRUCTION  
AND HAULAGE LOCATED AT 7 MILES  
BULLBAY ST. ANDREW WITH VOL. 1270 /  
FOL.92

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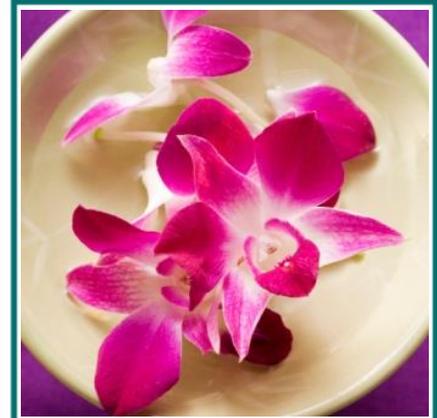
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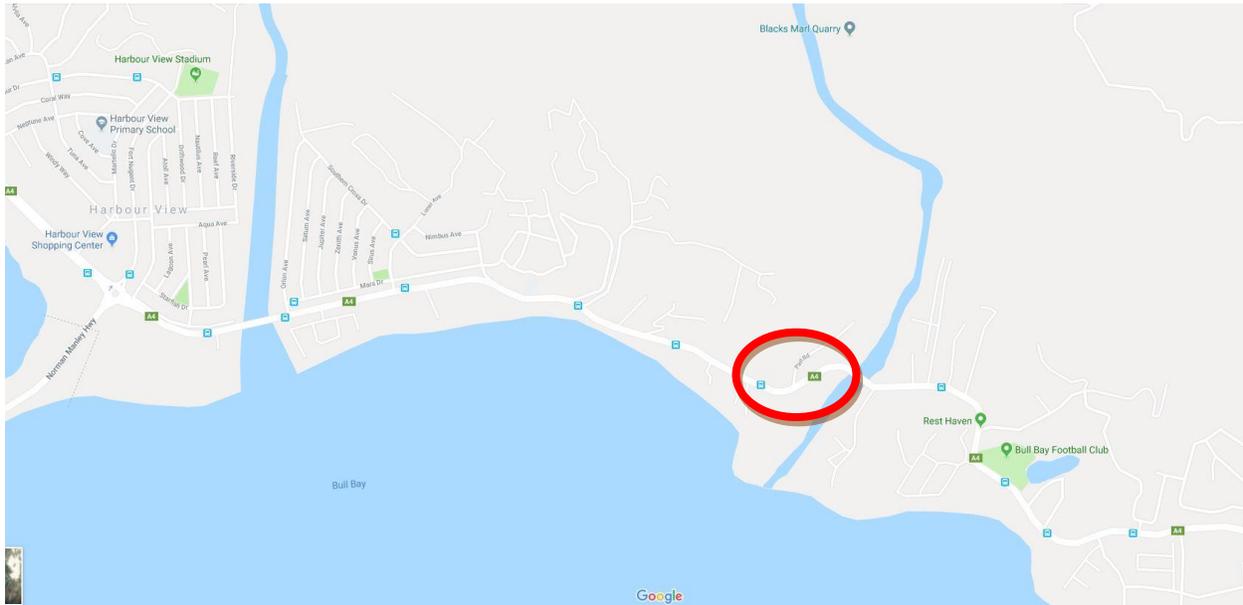
## **1.0 SUMMARY AND INFORMATION**

1. **Project Name:** BULL BAY ASPHALT PLANT
2. **Name of Developer:** Alcar Construction and Haulage
3. **Developer Mailing Address:** [alcar\\_construction@yahoo.com](mailto:alcar_construction@yahoo.com)
4. **Phone:** Office: (876) 750-0259-61 Cel.: (876) 371-0786
5. **Date:** 31<sup>st</sup> January 2018
6. **Date for Proposed Project Commencement:** December 2018

### **Project Data**

1. Area of Site - 4.94-acres 19991.32 square meter
2. Habitable rooms per Acre - 30
3. Number of Parking required as per development order - 1 space per 250 square feet
4. Parking required - 9
5. Number of Parking spaces Provided - 20
6. Amenity Area provided - 8153.4 square meters
7. Number of buildings - 1
8. Square footage of site office – Ground floor: 891 SF; First Floor: 1175; Total: 2066
9. Number of 2 Bedroom - 3
10. Sewage system – Septic tank → absorption pit
11. Storm water - natural flow

# Location Maps



## **2.0 INTRODUCTION**

**Bull Bay Asphalt Plant** is to be located on 4.94-acre brown field site located in 7 miles Bull Bay of St. Andrew. The site used to house a block factory and heavy equipment. It is setback significantly from the Caribbean Sea and also has the cane river running adjacent to it.

The site is in an area which is industrial on the northern and western edges. With Shaws quarry to the north and a Block factory to the west. The site's boundary is a 10 foot high reinforced concrete wall which wraps the entire site and is also set back from the main road by over 250 feet. The site is adjacent to the cane river to the east, which runs along the site's eastern boundary, the plant is set back from the river's edge by some 52 feet. The high banks of the river which measures 245 feet. And beyond the river further east exists some residential components.

The south property is very large and is currently unoccupied. It is at minimum 500 feet deep and hence provides a massive separation to the coast line.

## **3.0 PROJECT OVERVIEW AND DESIGN CONCEPTS**

The design of the asphalt plant is to be as light as possible, both with structures as well as impact to the surrounding lands. The asphalt plant is a DMI 100 mobile unit (see specifications attached) it consists of the following components: Main unit, Cold fee bin system, Feed conveyor, Control room, Asphalt Tank, Mix discharge system. The total length of the entire set up is approximately 105 feet x 100 feet.

### 3.1 The Structures

Figure 1 and Figure 2 shows the equipment and layout of the proposed asphalt plant, it consists of the following: Main unit, Cold fee bin system, Feed conveyor, Control room, Asphalt Tank, Mix discharge system.

It uses a 1,000-gallon diesel tank and a 10,000 gallon asphalt tank.

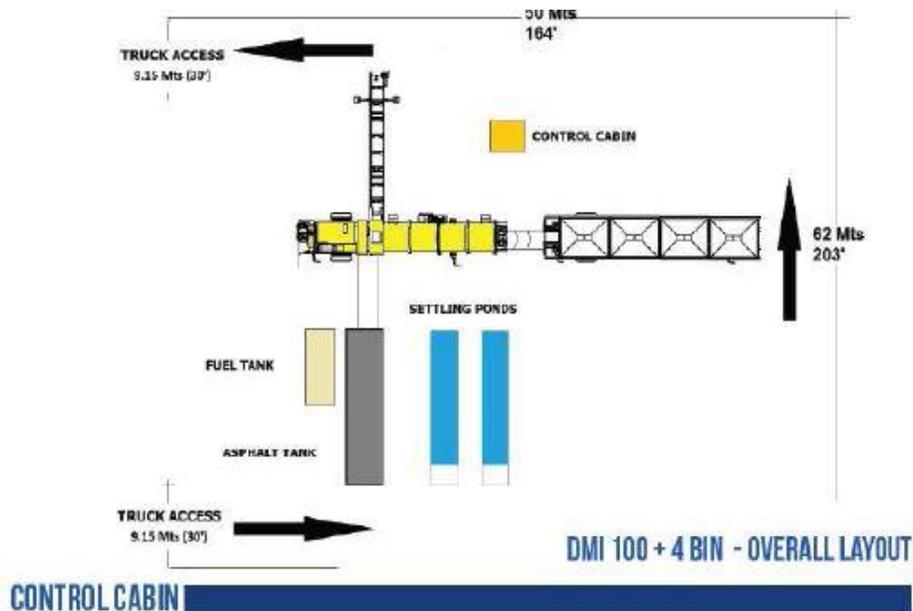


Figure 1 – Layout of the Asphalt Plant



CHARGE CONVEYOR



BURNER



DUAL FINES CONTROL SYSTEM



TIRE ROLLERS

This is a compact plant very easy to transport due to its efficient computerized design. Plant has been designed in USA and assembled in India under the most strict quality controls using state of the art fabrication tools (laser cutting, CNC machines, etc) and top brand components like Siemens motors (Germany), ABB variable drives (global), Southern Bedford, Jesh landing gears, etc. Plant ships in 4 @ 40' containers and requires minimum assembly work at destination.



Figure 2 – Asphalt Plant

### **3.2 Energy Efficiency Considerations**

The DMI 100 is energy efficient and reduces the amount of energy required to energise the system by its electric pre-wired computerized system. This reduces the start-up energy. With its dual fuel burner and dual fines control system it reduces the time for the entire process all while using the same amount of energy

### **3.3 Waste and storm water treatment**

Waste water will be through septic tank and absorption pit.

### **3.4 Planting and green surfaces**

The northern segment of the site will be landscaped in sections using plants and indigenous foliage which can stand up to the micro climate in that area, providing spaces for the workers during times of leisure and to beautify the area as well as to slow run off.

## **4.0 PROJECT DETAILS**

### **4.1 Estimated project schedule**

The project is expected to take 6 months to complete. Estimated completion July 2018

### **4.2 Estimated Project Cost**

The estimated cost is US\$300,000.00.

### **4.3 Building Elements**

Concrete and steel

## **5.0 Environmental Concerns**

The Bull Bay asphalt plant will be of the highest standard and as such many factors were taken into consideration, namely: site selection, dust and air emissions, odour, noise, waste water / effluents and storm water run-offs, solid wastes, waste oil, hydrocarbon and oil spills from vehicle and equipment and energy and water consumption.

The site was selected due to the other industrial activities located adjacent to it and that the itself used to be a block factory.

Though the site has a river adjacent to its boundary, that actual equipment is not spread out over the entire site, pf the 2.77 acres of site, only 17,000 square feet is being occupied by any activities whatsoever, and the closest bin is located 140 feet from the river. A curb is placed around the active areas of the site and oil and other waste material will be trapped and controlled to prevent and control run-off.

The dual burn system of the DMI plant greatly reduces waste into the air with majority of the gas escaping is steam, hence creating proper air quality in the surrounding areas.

### **Ambient Air Quality Mitigation Measures**

The pollutants of concern for an asphalt plant operation are particulate matter, volatile organic compounds (VOCs), Sulphur Dioxide, Nitrogen Dioxide and Carbon Monoxide. Odour from such operations can also be an issue. Exposure to particular matter and gaseous emissions on human health depends on the degree of exposure. Other impacts of pollution also include acid rain and smog.

The DM 100 Portable Asphalt Plant being used by Alcar Paving is equipped with the latest technology for pollution and dust control as the Drum Mix Plant contains a Dual Fines Control System for illuminating fugitive dust during the mixing process. Alcar Paving will also implement several mitigation measures to ensure particulate matter and gaseous emissions are controlled and within the Jamaica Ambient Air Quality Standards. These include: -

- Covering of material during transportation to eliminate the occurrence of fugitive dust.
- Covering of raw material with particulate matter of  $PM_{10}$  and smaller during storage on site to eliminate the occurrence of fugitive dust.
- Wetting of the site to control dust.
- Installation of a two-stage wet scrubbing system which is the only single air pollution device that is design to effectively remove both particulate matter and gaseous pollutants.
- A mist eliminator will also be included in the scrubber which will remove any droplets within the gas stream before it is discharged to the environment.
- A settling and filtration system will be utilized to treat the water from the wet scrubber before the water is recycled back into the system.

These mitigation measures will ensure that there are minimal impacts from the Alcar Asphalt Plant located in Bull Bay. The installation of the wet scrubbers on the asphalt plant is expected to significantly reduce or all together eliminate any pollutants being discharged into the environment. Therefore, as long as both scrubbers are properly maintained, designed and adequately sized the impacts from the operations of Alcar Asphalt Plant will be minimal.

## **6.0 Conclusion**

Bull bay asphalt plant is state of the art computerized equipment located on a large site, most of which will remain unused and will be planted over a period of time. The equipment is energy efficient and takes into consideration its surroundings both natural and man-made. It is efficient in all areas and will be part of the making of Jamaica, providing material for roadways connecting the various towns and cities and repairing those which are badly in need. Bull Bay Asphalt plant hopes to do this while maintaining the highest of standards in all its aspects, and the team will do its endeavour best that this once unused brown field site, which once produced blocks and set sail into the air dust particles, will now be a beacon for the right way to do development to the highest of not only national, but international standards.

## APPENDIX 1



### SPECS DMI 100

- **Capacity:** 100 TPH nominal capacity continuous operation at sea level based on a density of 1.6 ton/m<sup>3</sup>, air temperature of 150° C and 3% humidity in the aggregates
- **Cold Feed Bin System:** 4 bins 9 Ton capacity each with the extensions made out of 5mm structural steel. Calibrated gates and variable speed feeders for aggregate dispensing accuracy. (Final calibration is needed at installation)
- **Charge Conveyor + Scalping Screen:** powered by a 7.5 HP motor, with vibrating scalping screen feeds the Mixing Drum with the aggregate coming from the cold feed bin system.
- **Drying/Mixing Drum:** Made of 10mm structural steel and mounted on 4 rollers providing low maintenance and low sound emissions. Completely automatic dual fuel burner that can use Diesel or LDO, with a 15 HP blower motor and a high pressure 20 HP pump motor
- **DUAL Pollution Control System:** Combination of high turbulence venture scrubber and cyclone box unit with 36 Cyclones and wet scrubber complete with stainless steel nozzles and air velocity control system. All mounted on same drum chassis. Includes 5HP water pump.
- **Open Loadout System:** 26" wide hot belt conveyor with 2000 lbs batcher (hydraulically operated). Approximately 35' long conveyor powered by a 7.5hp motor. Hydraulic power pack system powered by a 3 hp motor
- **Control Cabin with Automated Control Panel:** Computer controls all the functions on the plant Cold feed bins, burner, asphalt flow, temperatures either automatic, semiautomatic or manually. All electrical wiring completely pre-installed and quick connectors.
- **Stationary Asphalt Tank** direct fired 10,000 gallons storage capacity, dual Italian Riello Burners 800,000 BTU each, includes scavenger hot oils system, agitators to store PMAC, unloading pump control panel see specs included separately with this quote.

\*Designed by DMI Asphalt Equipment in USA, made with German & England components under American quality Standards, tank assembled in Brazil and Plant assembled in India.