CITY OF MIAMI, FLORIDA

INTER-OFFICE MEMORANDUM

TO: Devin Cejas
Zoning Administrator

FROM: Francisco J. Garcia
Planning & Zoning Director

DATE: May 6, 2016

SUBJECT: Determination No. 2016-01
Concrete Batching Plants in
Industrial Areas

REFERENCES:

ENCLOSURES:

Pursuant to Section 7.1.2.2 of the Miami 21 Code (the Code), as amended, which establishes the criteria for "Determination of Use", it is hereby determined that "Concrete Batching Plants" as herein described are distinguished from cement plants which continue to be specifically excluded as set forth in Section 6.1 "Intent and Exclusions" of the Code.

It is further determined that Concrete Batching Plants are permissible only in Industrial areas zoned D2 through the Warrant process as set forth in the Code to properly address any potential adverse impacts through the application of all applicable criteria contained in Article 4, Table 12, "Design Review Criteria" of the Code.

In support of the above determination it is found that these uses if appropriately implemented are generally in keeping with the intent and definition of Industrial zones to encompass functions involving manufacturing, fabrication, assembly, distribution, disposal, warehousing or bulk storage, trucking and equipment facilities, serving primarily industrial needs.

Concrete Batching Plant Description and Methods
Concrete is a mixture of cement, water, sand and aggregate is called concrete. The product is also named 'Portland Cement' because after hardening the product resembles a natural limestone quarried at Portland, England.

Components of Concrete
The process for making concrete is relatively simple, but the chemistry of cement manufacture is complex. The components of concrete include calcium, silica, alumina, magnesia, iron oxide and sulfur dioxide compounds along with:

- Fly ash – a glass-like substance used in good quality cement products
- Aggregates consisting of gravel and sand, which comprise the major raw material of concrete (aggregates are graded according to their size and character)
- Admixtures – compounds added to the concrete in small quantities to modify its properties. The amount of water required to chemically combine the cement is about 16% by weight, but for more efficient mixing a greater amount is used. Adding more water weakens the concrete, but makes it easier to work with.

In a concrete batching plant, the raw materials are mixed as discussed below.

a. Front End Loader Concrete Batching
In front end loader plants, a front end loader is used to transport coarse and fine aggregates from a ground level storage bin to an aggregate weigh hopper. The aggregate is then added to an agitator. Cement and fly ash are weighed in a separate hopper and transferred to the agitator. The correct proportion of water is added to the agitator. The concrete is mixed, ready for final slumping, inspection and transportation to the customer.

b. Overhead Bin Concrete Batching
In overhead bin batching plants, coarse and fine aggregates are stored in separate bins. Aggregates are transported from the bins to a compartmentalized overhead storage hopper by conveyor belts. A weigh hopper is situated directly beneath the overhead storage hopper, where aggregate is weighed and transferred to the agitator. Cement and fly ash are stored in separate overhead silos. They are weighed in a separate hopper and dropped into the agitator. The correct proportion of water is added, along with any required admixtures and the concrete is mixed, ready for final slumping, inspection and transportation to the building site.

Permissibility
Concrete Batching Plants shall be reviewed by process of Warrant subject to restrictions set forth herein. Additional considerations in reviewing the warrant application shall include siting, air quality, noise, waste minimization and water quality as follows:

a. Siting

Objective
To minimize environmental impacts by appropriate site selection.

Suggested measures
· Batching plants should be sited on land that is not flood prone.
· Consider the current and future proximity of sensitive land uses.
· Establish and maintain buffer distances of 500 feet form residential areas.
· Provide vehicle access routes which minimize impacts.

b. Air Quality
Objective *To avoid or substantially reduce dust emissions so there is no loss of amenity.*

Suggested measures
- Keep sand and aggregates damp.
- Cover or enclose conveyor belts and hoppers.
- Keep pavements and surfaces clean.
- Fit cement silos with high level alarms, multi-bag pulse jet filters, airtight inspection hatches and automatic cutoff switches on the filler lines.
- Keep duct work airtight.
- Enclose the loading bay.
- Develop and implement an inspection regime for all dust control components.
- Clean up spills immediately.

c. Noise

Objective
To ensure no noise nuisance results from the facility.

Suggested measures
- Select quieter equipment.
- Alter or enclose equipment to reduce noise at the source.
- Use sound absorbing materials to prevent the spread of noise by isolating the source.
- Ensure alarms are used for emergencies only.
- Avoid use of public address systems.

d. Waste Minimization

Objective
To minimize waste generation and maximize economic benefits.

Suggested measures
- Establish a management policy supporting waste minimization.
- Establish a waste management team.
- Conduct a waste audit.
- Assess viable waste minimization projects.
- Prepare and implement a waste management plan.
- Monitor and evaluate the effectiveness of the waste management plan.

e. Water Quality

Objective
To ensure contaminated wastewater is not discharged from the concrete batching plant to surface waters, groundwater or land.

Suggested measures

- Minimize the area of the site which generates contaminated storm water runoff.
- Provide a separate dedicated drainage system to discharge clean storm water from the site.
- Drain all contaminated storm water and process wastewater to a collection pit for recycling.
- Regularly clean out solids that accumulate in the pit.
- The wastewater recycling system must be able to store the contaminated runoff generated by 1 inch of rain in 24 hours.
- Use wastewater stored in the recycling system at the earliest possible opportunity.
- There must be no dry weather wastewater discharges from the site.
- Monitor wet weather discharges for pH and suspended solids. Retain the records.

At the next opportunity, this department will initiate a proposed amendment to the Miami 21 Code to appropriately reflect this Determination. Until final action has been taken by the City Commission on the proposed amendment, this Determination shall be binding on all officers and agencies of the City as an interim administrative ruling, and become effective upon the publication of the Determination and conclusion of the applicable appeal period, pursuant to Article 7.1.2.2 a, b, and c, of the Miami 21 Code.

cc: Honorable Mayor and Commissioners
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