

Dust and Vibrations



**DEVELOPMENT PERMIT
APPLICATION – PLANNING
RATIONALE
DUST AND VIBRATIONS**

Sofina New Poultry Facility, Calgary, AB

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Dust and Vibrations

Sign-off Sheet

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Dust and Vibrations

DEVELOPMENT PERMIT APPLICATION – PLANNING RATIONALE, DUST AND VIBRATIONS

Table of Contents

1.0	BACKGROUND AND INTRODUCTION	1
1.1	BACKGROUND.....	1
1.2	INTRODUCTION.....	2
1.2.1	Operations Overview.....	2
2.0	NOISE, VIBRATION, ODOUR AND DUST CONTROL.....	2
2.1.1	Vibration Control	3
2.1.2	Dust Control.....	5
3.0	CONCLUSION	5
LIST OF TABLES		
	Table 2-1 – Noise / Vibration, Odour and Dust Control - Poultry Operations	3
LIST OF FIGURES		
	Figure 2-1: Spring Damper Isolators	4
	Figure 2-2: Spring Damper Isolators – Detail	4

Dust and Vibrations

DEVELOPMENT PERMIT APPLICATION – PLANNING RATIONALE, DUST AND VIBRATIONS

1.0 BACKGROUND AND INTRODUCTION

1.1 BACKGROUND

Sofina Foods Inc. (Sofina - owners of Lilydale) is relocating their Poultry Processing Facility (facility) from its current location at 2128 Hurst Rd. SE, to a new site located in the Dufferin II Industrial area. A poultry processing facility has been located at Sofina's existing site since the 1960's. The facility is classified as Legally Non-Conforming and therefore cannot be expanded or modified to meet the current animal welfare or processing guidelines. A portion of the existing site is also required by the new Green line LRT project for trackage and route right of way, which requires the plant to be relocated.

Sofina has secured land in the Dufferin II (North) Industrial Sub Division for a new poultry processing plant. The proposed land has been re-zoned to a DC district (LOC2017-0266/CPC2018-0295) to allow for the construction of a Slaughter house.

The new facility will process live chicken into various meat cuts for institutional, commercial and retail customers. The facility will be a primary processor and will not produce further processed or cooked products. The facility will not render or further process any by-products of the process.

The facility will be designed to process 13,500 birds per hour and will operate over two eight-hour shifts, Monday to Friday, with a third shift for cleaning and sanitation of the plant. There are no formal operations scheduled for weekends except shipping. Any other weekend work will be associated with facility maintenance, not production.

The plant has been designed to the guidelines established by the Canadian Food Inspection Agency for food plant construction and operation. In addition, the design reflects the highest standards for both animal welfare and people health and safety.

Dust and Vibrations

DEVELOPMENT PERMIT APPLICATION – PLANNING RATIONALE, DUST AND VIBRATIONS

1.2 INTRODUCTION

Stantec Architecture Ltd. has been retained as the Prime Consultant for the design of the Sofina Foods Inc. New Poultry Facility in Calgary. Sofina has completed the Land Use Amendment with the City of Calgary, and the parcel is now zoned as a Direct Control District (DC) with a discretionary use - Slaughter House. The rules for an application for a Development Permit for this use requires:

- a) an operational management plan, completed by a qualified professional, that includes details on:
 - i) the management, mitigation and discharge of airborne emissions, including smell;
 - ii) public response and communications;
 - iii) waste management;
 - iv) noise, vibration and dust control; and
 - v) traffic and transportation management; and
- b) any other information that is deemed appropriate by the Development Authority.

The document DEVELOPMENT PERMIT APPLICATION – PLANNING RATIONALE AND STUDIES, Stantec, September 28, 2018 includes attached studies for Odour, Noise and Traffic, and included protocols on public response and communications. The purpose of this document is to outline how the project relates to the rules of the Calgary Land Use Bylaw 1P2007, specifically surrounding vibration and dust.

1.2.1 Operations Overview

Refer to the document DEVELOPMENT PERMIT APPLICATION – PLANNING RATIONALE AND STUDIES, Stantec, September 28, 2018 for an overview of Poultry Operations.

2.0 NOISE, VIBRATION, ODOUR AND DUST CONTROL

Noise, vibration, odour and dust control will be achieved through a combination of operational protocols, facility licensing regulations (i.e. Canadian Food Inspection Agency), equipment commissioning and engineering design. Odour and noise studies have been completed, based on the sources of noise and odour at the current facility and serves as a basis for mitigation measures that will be incorporated during the detailed engineering design of the new facility. These studies are included in **Appendix B of the document DEVELOPMENT PERMIT APPLICATION – PLANNING RATIONALE AND STUDIES, Stantec, September 28, 2018.** Vibration, and dust will be largely controlled through basic design and operations methods: sources of vibration and dust will be mitigated by the design of the facility, manufacturers commissioning requirements for equipment, government regulations and all poultry operations will occur indoors. Table 2-1 lists potential sources of noise/vibration, dust and odour, and mitigating control methods planned for the new facility.

Dust and Vibrations

DEVELOPMENT PERMIT APPLICATION – PLANNING RATIONALE, DUST AND VIBRATIONS

Table 2-1 – Noise / Vibration, Odour and Dust Control - Poultry Operations

Location	Activity	Noise, Odour and Dust Control
Site	Live Trailer Arrival	<ul style="list-style-type: none"> Trailers go directly into Live Shed (noise and odour control) Asphalt paved internal roads (noise and dust control)
Live Shed	Live staging	<ul style="list-style-type: none"> Controlled conditioned enclosed holding space (noise, dust and odour control) Modular live shed design (noise and odour control) odour control on ventilation exhaust (odour control)
Poultry Plant	Poultry Processing	<ul style="list-style-type: none"> odour control on ventilation exhaust (odour control) daily cleaning of entire plant (odour control)
Poultry Plant	Refrigeration compressor vibrations	<ul style="list-style-type: none"> suitable foundation design, isolation and dampening (vibration control) maximum dB specs (noise control) manufactures requirements for dynamic balancing of rotating equipment for vibration control (noise and vibration control)
Poultry Plant	Mechanical equipment vibrations	<ul style="list-style-type: none"> suitable foundation design, isolation and dampening (vibration control) maximum dB specs (noise control) manufactures requirements for dynamic balancing of rotating equipment for vibration control (noise and vibration control)
Inedible	Inedible Loading	<ul style="list-style-type: none"> Controlled enclosed holding space (noise, dust and odour control) Odour control on ventilation exhaust (odour control) Frequent removal of inedible products from site (odour control) Daily cleaning of area (odour control)
Process Wastewater Treatment Plant (PWWTP)	Treatment of Wastewater and Loading of solid waste screenings and dewatered sludge	<ul style="list-style-type: none"> Controlled enclosed holding space (noise and odour control) Odour control on ventilation exhaust (Odour control) Frequent removal of solids wastes from site (odour control)
Process Wastewater Treatment Plant (PWWTP)	Process Mechanical equipment vibrations	<ul style="list-style-type: none"> suitable foundation design, isolation and dampening (vibration control) maximum dB specs (noise control) manufactures requirements for dynamic balancing of rotating equipment for vibration control (noise and vibration control)

2.1.1 Vibration Control

Vibrations from equipment will be mitigated through suitable foundation design, using isolation and/or dampeners to minimize vibration transfer to the building structure and dynamic balancing of rotating equipment. Examples of standard isolation dampers are shown in Figure 2-1 and Figure 2-2. Larger equipment containing rotating mass, such as reciprocating engines (generators), turbines, or very large compressors and pumps may require alternate measures such as tuned mass damping or pneumatic/air isolators. The proposed project does not contain any such large rotating-mass equipment.

Dust and Vibrations

DEVELOPMENT PERMIT APPLICATION – PLANNING RATIONALE, DUST AND VIBRATIONS



Figure 2-1: Spring Damper Isolators



Figure 2-2: Spring Damper Isolators – Detail

Dust and Vibrations

DEVELOPMENT PERMIT APPLICATION – PLANNING RATIONALE, DUST AND VIBRATIONS

2.1.2 Dust Control

To minimize dust, Poultry process operations will be contained within the building and asphalt paving is used for all vehicle circulation areas. Additionally, a dust collection system will be provided to collect dust from dust-generating processes within the building. CFIA Safe Food for Canadians Regulations and the Meat and Poultry Products - Manual of Procedure requires that driveways, roadways and parking lots within the site are properly graded, drained and maintained to mitigate risk of food contamination. This includes regular cleaning of the site to minimize dust and debris.

3.0 CONCLUSION

The proposed facility does not contain any equipment or operations that would produce vibrations or dust beyond what would normally be expected for an industrial development.