

3 July 2014

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Dear Trent

Proposed Lindt facility, Marsden Park – Odour Evaluation

1 INTRODUCTION

Pacific Environment has been requested to complete an evaluation of the odour impacts associated with the proposed relocation of Lindt & Sprüngli Australia (Lindt)'s baking facility to Marsden Park, NSW.

Lindt is proposing to develop a warehouse and manufacturing facility on a 6.5 hectare site in Sydney Business Park, located in the Marsden Park Industrial Precinct in Western Sydney. The facility would be constructed by Qanstruct Pty Limited (Qanstruct) on behalf of Lindt and Toll Global Logistics (Toll), which would manage the logistics for the facility.

The Lindt Facility is proposed to be developed on Hollinsworth Road, Marsden Park (the site), within the employment estate known as Sydney Business Park. The current real property description of the site is Part lot 16 in DP 262886 and Part lot 100 in DP 1169158, although these lots are in the process of being subdivided to accommodate the proposal. The site has an area of approximately 6.5 hectares, and is located in the Blacktown local government area.

Blacktown City Council has requested that a report be provided by a suitably qualified person to evaluate the potential for adverse odour impacts associated with the operation of the facility

1.1 Evaluation Approach

There are several methods to evaluate odour from a facility. Were a new development is proposed, evaluation may be completed using an odour dispersion modelling exercise, completed to the NSW EPA's *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW* and associated odour technical guidance documentation. While this approach is useful in the prediction of impacts, it is by its nature theoretical and is not always the appropriate tool.

In this instance, there is an existing Lindt facility that is operational located in Mascot, NSW (with manufacturing proposed to be relocated to Marsden Park), As operations will

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effectively be duplicated at Marsden Park, it was deemed appropriate to reference the potential for odour and experience of this facility in the evaluation of the Marsden Park facility.

To this end, a site inspection of Lindt's Mascot facility (located at Unit C3 200 Coward St, Mascot) was completed on 2 July 2014 by Damon Roddis of Pacific Environment. A site tour of relevant (potentially odorous) activities was provided, and interviews were held with Lindt personnel (principally Mr Anthony Maurici). The outcomes of this process are documented below.

2 FACILITY OVERVIEW

The warehouse component of the facility would be temperature and humidity controlled, and would be used for the storage and distribution of Lindt chocolates and goods throughout NSW and beyond.

Most relevant to the evaluation of odour is the manufacturing component, which would be used predominately for the baking of foods for Lindt's range of cafes and third party stores, and for packaging goods.

The baking processes on site has the potential to produce some odour, but any such emissions are not expected to be noticeable outside the industrial area and would not be objectionable given the nature of the goods being produced. The main products from this process are cakes, macarons, profiteroles and eclairs.

The showroom would be used to showcase Lindt's product range and would include a small retail outlet. The ancillary office would be used to provide administrative support for the business, with the facility representing Lindt's NSW headquarters.

2.1 Scale of Operations

To evaluate the potential for odour generation, it is important to understand the scale of the proposed manufacturing operations. While production may increase according to demand, at least initially it is proposed that the equipment and scale of operations will be similar to those at the existing Mascot facility.

In terms of the activities relevant to odour generation, these may be summarised as:

- Two gas stoves, with overhead extraction. Stoves are used principally for the heating of syrup and cream (**Figure A-1**)
- Electric oven (i.e. no gas flue) (**Figure A-2**) with the ability to bake up to fourteen trays of cakes / pastries (**Figure A-3**)
- Dishwasher with steam extraction to atmosphere (**Figure A-4**)

There are various other processes that either currently have, or are proposed to include, a level of extraction and filtration. These include:

- Sifter (for cocoa and almond meal) (**Figure A-5**)
- Chocolate nut coating (**Figure A-6**)
- Melted chocolate spray coating

However, these systems are enclosed (i.e. do not vent to atmosphere) and the extraction / filtration is principally for housekeeping purposes.

3 RECEPTORS AND ODOUR COMPLAINT HISTORY

There are several residential receptors located approximately 100m to the north of the existing Mascot facility.

The closest residential zoned land to the proposed Marsden Park facility is located approximately 500 metres to the southeast and north-east of the site across Richmond Road. There are also a small number of residual residences on rural properties within the business park, as well as a caravan park, with the closest receiver located approximately 300 metres to the south-west.

Interviews with Mascot site personnel (facility manager) confirmed that there have been no odour complaints received by Lindt during his time at the site (18 months). It was also confirmed that there was not anticipated to have been any odour-related complaints prior to this period.

4 GOOD PRACTICE ODOUR MITIGATION

Notwithstanding the lack of odour complaints at the existing Lindt facility, there are good practice odour management measures that can be adopted during the design phase of a project to further reduce the likelihood of adverse odour impact.

Such measures are documented within the following relevant publications:

- Australian Standard AS 1668.2 – 1991: The use of mechanical ventilation and air conditioning in buildings. Part 2 Mechanical ventilation for acceptable indoor air quality.
- NSW DEC (2006) "Technical Framework: Assessment and Management of Odour from Stationary Sources in NSW". November, 2006 ('the Technical Framework').
- NSW DECCW Local Government Air Quality Toolkit: Air Quality Guidance Note for Food Outlets ('the Local Government Toolkit').

Good practice exhaust exit parameters relevant to the proposed Lindt facility at Marsden Park, as provided in the above references, may be summarised as:

Exit Velocity recommended to be equal to / greater than:

- 15 m/s (or 1.5 times the local maximum wind speed, whichever is greater) to avoid stack tip downwash of the exhaust gases (the Technical Framework).
- 10 m/s, recommended for odour control from food outlets (the Local Government Toolkit)
- 5 m/s (AS 1668.2 – 1991)

In view of the above, **a minimum exit velocity for potentially odorous exhaust streams of 10 m/s is considered appropriate** given the scale and nature of the facility's activities.

The following guidance is provided in relation to stack height and design:

- stacks to be at least as high as the building height plus 1.5 times the height of either the building height or the building width, whichever is less (the Technical Framework).

- 3m above the highest point of the building in which it is located (or of nearby buildings (the Air Quality Toolkit).
- 1m above the ridge of a pitched roof and 3m above a flat roof (AS 1668.2 – 1991).

In view of the above, **it is recommended that the stack height be designed per the Air Quality Toolkit (3m above the highest point of the building).**

Finally, **it is recommended that potentially odorous emissions should be released as a free vertical discharge with a rain cap that does not restrict vertical discharge.**

It is considered that the adoption of the above guidance will further serve to safeguard against the possibility of adverse odour impact from the proposed facility.

5 SUMMARY AND CONCLUSION

A site inspection of the existing Lindt manufacturing facility was completed for the purposes of odour evaluation.

In view of the following aspects:

- No odour complaints history
- Scale of operations
- Separation distance between potential odour sources and receptors
- General acceptance of any potential odour (cakes and pastry baking)

It is considered that the potential for adverse odour impact associated with the operation of the proposed facility at Marsden Park is low.

Further, by using good engineering design, as documented above, it is considered that this potential for odour impacts may be further mitigated.

Do not hesitate to contact the undersigned should you have queries on any aspect of the above.

Yours Sincerely



Damon Roddis
Principal Scientist – Air Quality and Odour

Encl. Appendix A: Site Visit Photo Log

APPENDIX A

SITE VISIT PHOTO LOG



Figure A - 1: Gas stoves with overhead extraction system



Figure A - 2: Electric oven



Figure G - 3: Trays representing typical oven load



Figure A - 4: Dishwasher with overhead steam extraction system



Figure A - 5: Sifter for cocoa and almond meal, showing internal extraction / filter



Figure A - 6: Chocolate nut coating with internal extraction