NORTHSHORE HAMILTON DEVELOPMENT

260 MacArthur Avenue, Hamilton

Air Quality Assessment

Silverstone Developments

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CONTENTS

FIGURES

1. INTRODUCTION

1.1 Overview

Trinity Consultants Australia was commissioned by Silverstone Developments to provide an air quality impact assessment for the mixed use development proposed at Northshore Hamilton. The site is located at the eastern half of 260 MacArthur Avenue, which is described as Lot 6 on SP326594.

The proposed development includes a high-rise building comprising two apartment blocks on a shared ground floor, standing 9 and 12 stories high, with a total of 176 units. It also includes a gym, a pool, multipurpose rooms and gardens on Level 1, retail shops on the ground floor, and a closed car park in the basement. It is situated within the Northshore Hamilton Priority Development Area (PDA) and is close to several major industrial uses, including:

- BCC Eagle Farm Asphalt Plant
- Boral Whinstanes Concreted Batching Plant
- CP Plating Industry

This qualitative air quality assessment report has been carried out to support a development application over the subject site.

The assessment has been undertaken in accordance with the requirements of the Northshore Hamilton PDA Development Scheme (October 2022). The subject site is noted to be outside the air quality constraints area defined in Map 6 of the development scheme. Furthermore, the scheme specifies a maximum building height of 85 metres, which is approximately 40 metres higher than the proposed building. Nevertheless, potential air quality impacts from nearby industrial premises on the proposed development have still been reviewed.

In addition to this, potential air quality impacts from the proposed basement car park and ground-floor retail spaces, including a restaurant and a bakery, on nearby existing and future sensitive premises, have been reviewed.

1.2 Scope

This report describes the assessment of air quality impacts, which is based on the following tasks:

1. Review industry sources as well as proposed new sources such as restaurant, bakery and car park.
2. Screening assessment:
    a. Review development details, sensitive use locations, emission sources and development air intake locations.
    b. Review Northshore Hamilton Priority Development Area Air Quality Constraints Assessment document.
    c. Undertake a site visit to confirm existing emission sources and sensitive receptors.
    d. Conduct a qualitative assessment of potential air quality impacts from the nearby industry.
    e. Conduct a qualitative assessment of potential air quality impacts from the proposed development onto onsite and offsite sensitive receptors.
    f. Where relevant, provide recommendations to maintain acceptable air quality at sensitive use locations.

2. STUDY AREA DESCRIPTION

The subject site is located at 260 MacArthur Avenue, Hamilton, on part of Lot 6 on SP326594. This property is in a Priority Development Area declared under the Economic Development Act 2012 (effective February 2013). The Northshore Hamilton PDA (the PDA) was declared by regulation 4 under the former Urban Land Development Authority Act 2007 (ULDA Act) on 27 March 2008. The regulatory map identifying the boundaries of the PDA is identified in **Figure 2.1**.

The PDA is approximately 304 hectares in area and is bound by the Brisbane River to the south, Kingsford Smith Drive to the north and the Gateway Motorway and Southern Cross Motorway to the east as identified on Map 1b – PDA Location.

Figure 2.1: Northshore Hamilton PDA Boundary (Source: Economic Development Queensland, 2022)

According to Brisbane City Council (BCC) City Plan 2014, the property is designated as Emerging Community. It is surrounded by the following:

- Residential community and an open park in the east.
- A mix of general industries and future residential mixed uses in the north and west.
- A recreational facility towards south.

The site location and zoning are shown in **Figure 2.2**.

Figure 2.2: Subject Site Location and Zoning

The review and site visit indicated that the site's surrounding area includes industrial uses such as asphalt production, concrete production, vehicle modification, software, transport, plating residential and commercial properties. Any potential air emissions from these land uses are described in **Section 5.1**.

3. PROPOSED DEVELOPMENT

The proposed development includes one residential building, comprising two apartment blocks on a shared ground floor, 9 and 12 stories high, with a total of 176 units (1 to 3 bedrooms), as well as with community spaces, retail shops and a basement car park.

A summary of key features include:

- Basement car parking
- 176 residential units (1 to 3 bedrooms)
- Community spaces on Level 1 podium:
  - Pool
  - Garden
  - Gym
  - Change rooms
  - Flexible space
- Retail spaces at ground level:
  - Costumer carpark
  - Waste collection and loading zones
  - Restaurant
  - Hairdresser
  - Bakery
  - Bottle shop
  - Grocery

Concept plans of the proposed development are shown in from **Figure 3.1** to **Figure 3.4**.

Figure 3.1: Ground Level Layout (copy of from DA Plan TP2-1002, Rev 13 – Ground Level)

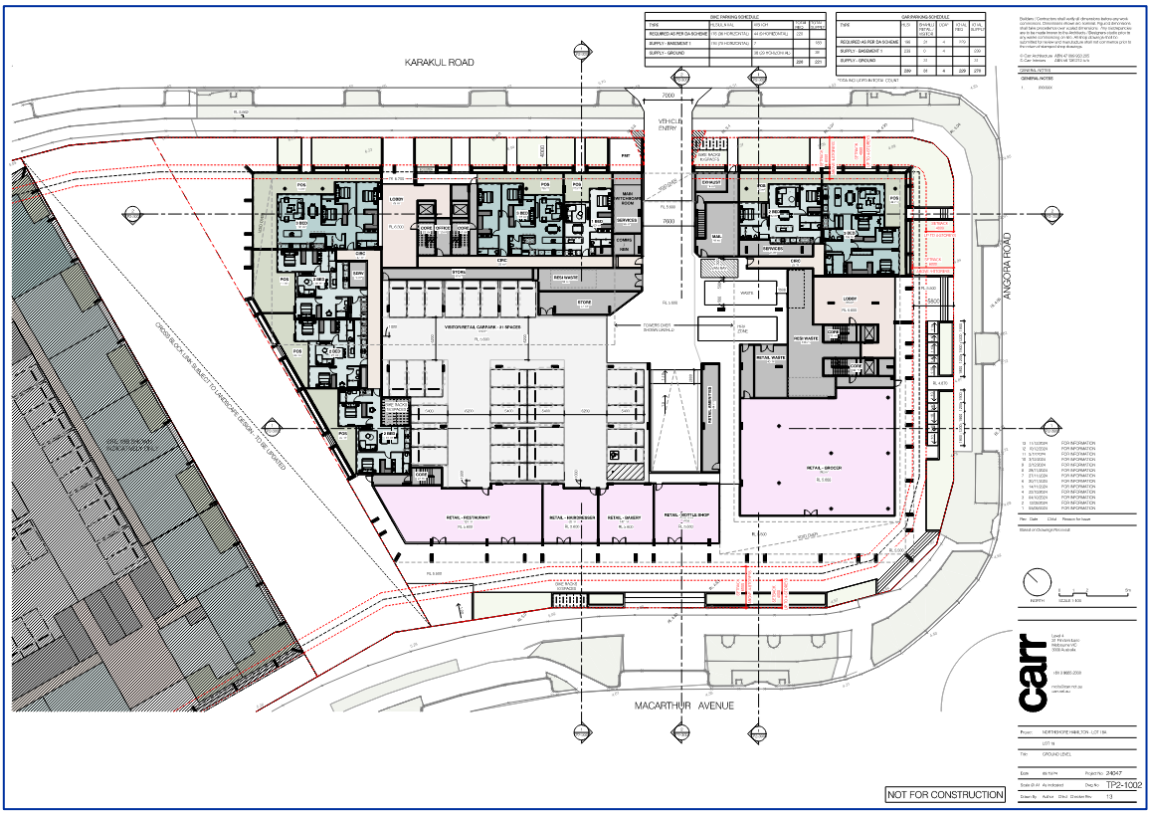


Figure 3.2: Level 1 Layout (copy of from DA Plan TP2-1003, Rev 10 – Level 1 Podium)

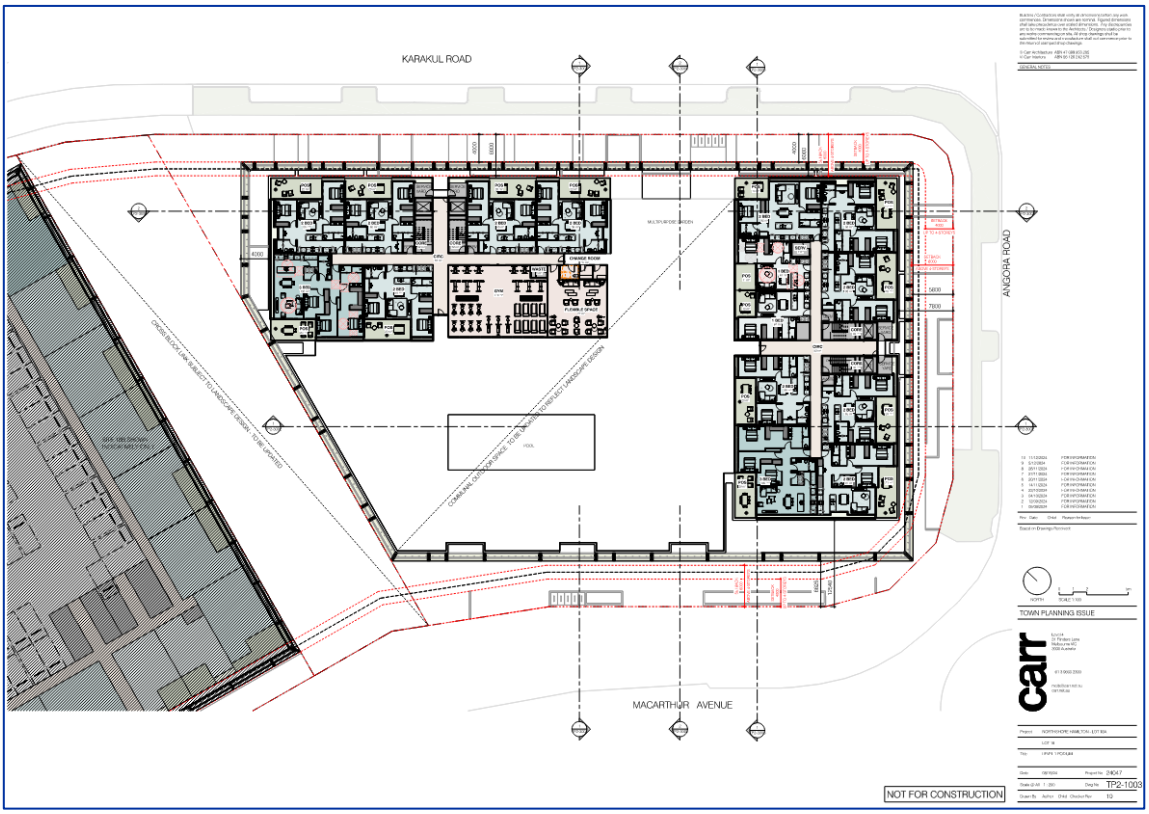


Figure 3.3: Level 2-8 Layout (copy of from DA Plan TP2-1004, Rev 1 – Level 2-8)

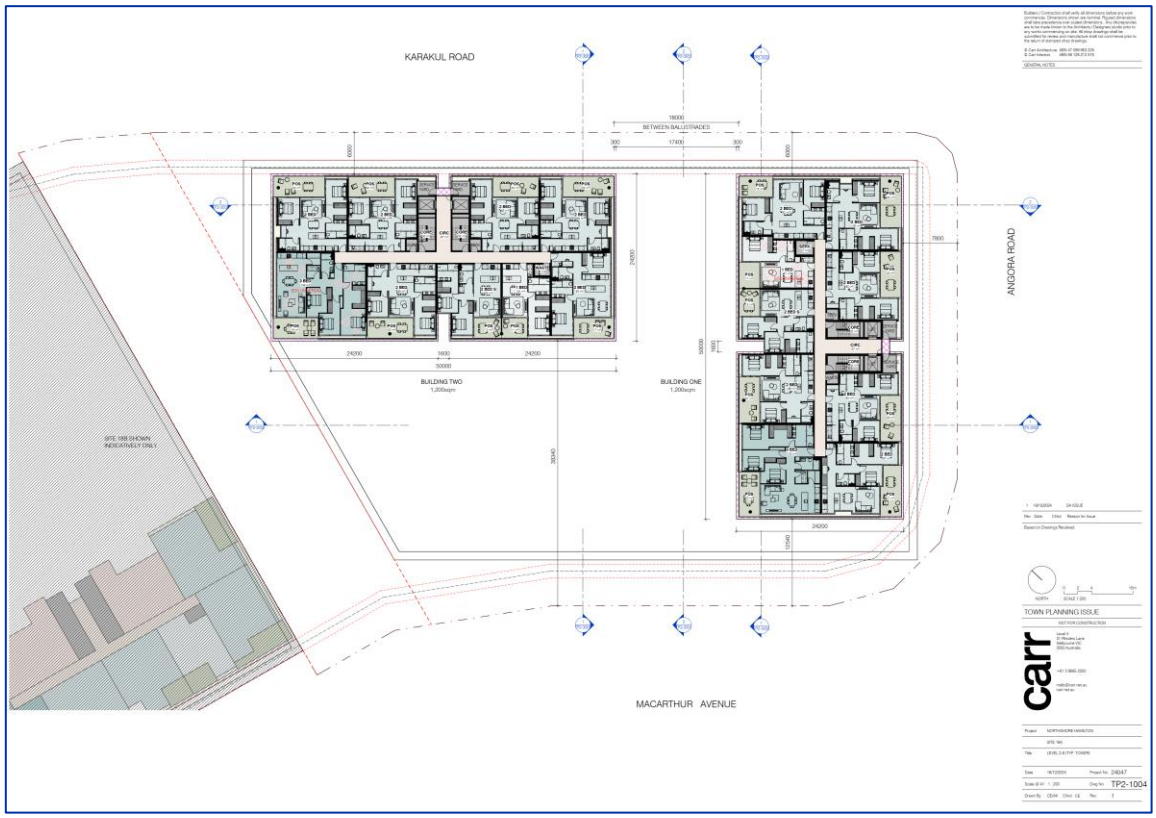
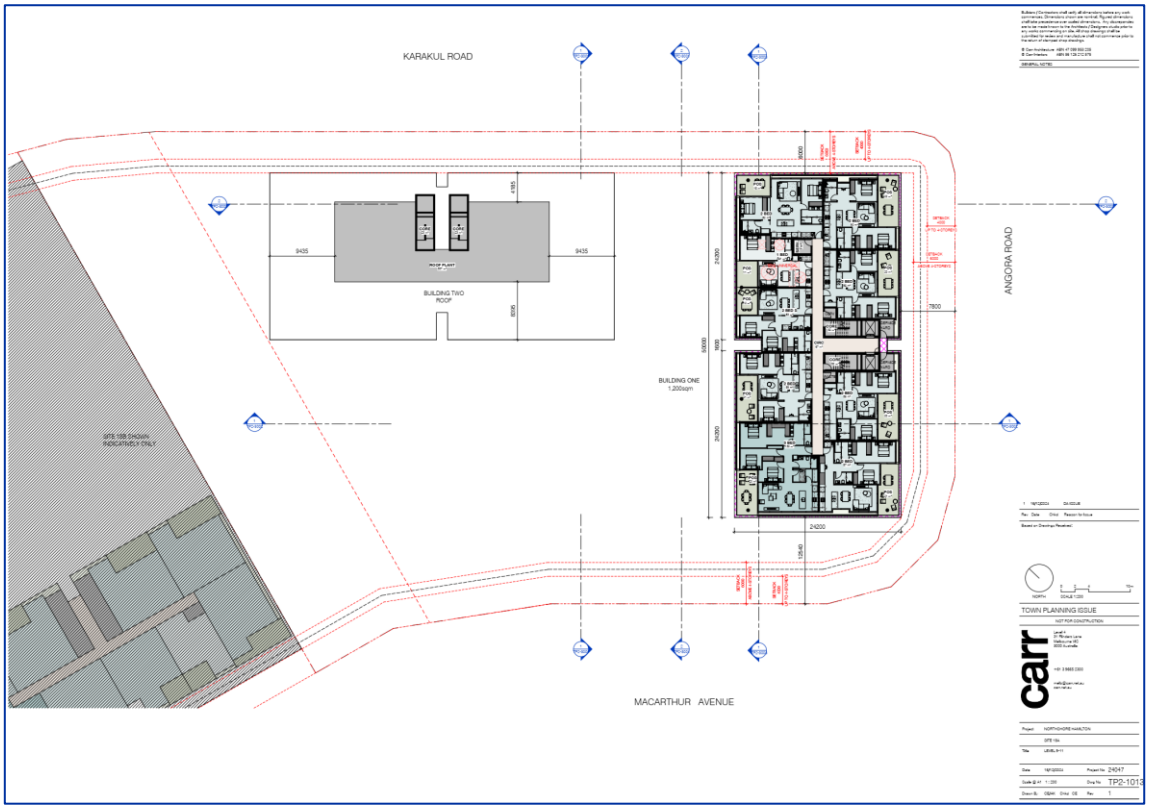


Figure 3.4: Level 9-11 Layout (copy of from DA Plan TP2-1013, Rev 1 – Level 9-11)



4. PLANNING REQUIREMENTS

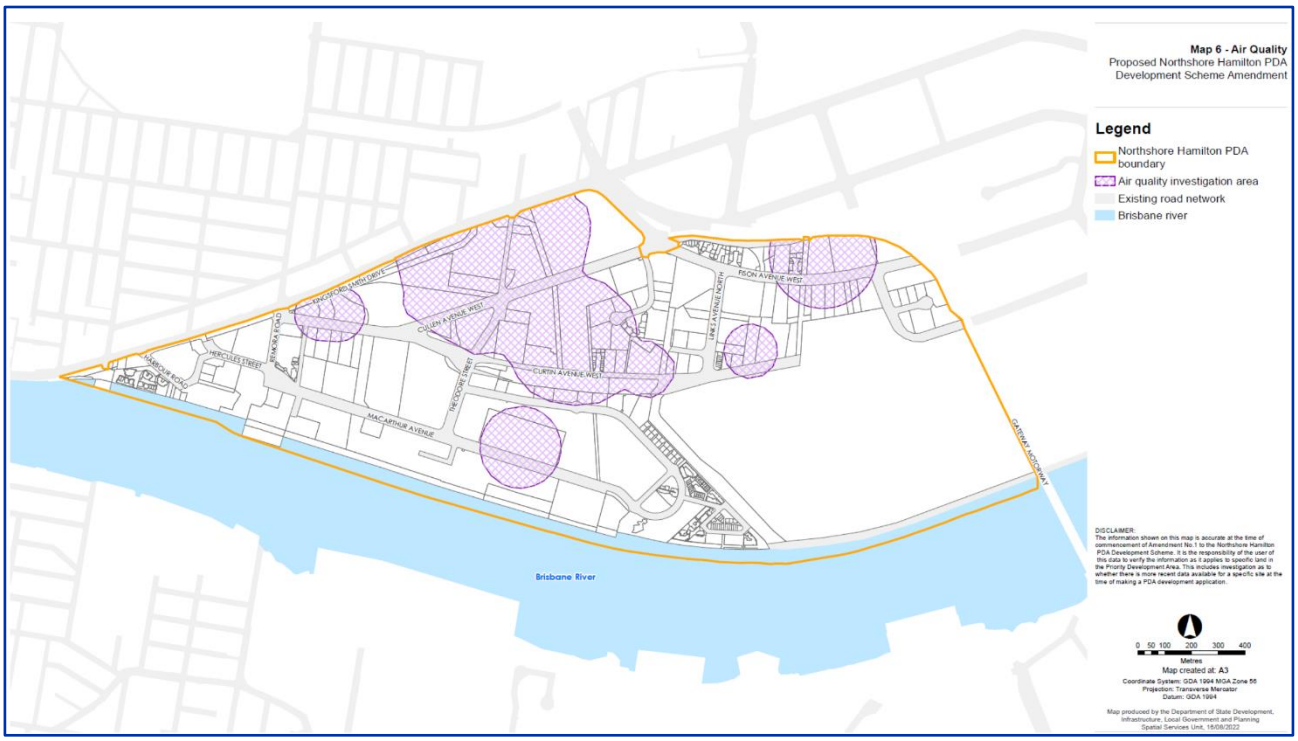
The proposed development site is within the Northshore Hamilton PDA and close to several major industries and sensitive residential uses. Therefore, it was important to study the location of the proposed development, which may be constrained by potential air quality impacts and emissions in the Northshore Hamilton PDA subject to location, building height and emission control.

With respect to air quality impacts onto sensitive uses, Section 2.5.9.4 of the development scheme states the following:

> **For air quality impacts onto the proposed development:**
>
> *Development within the investigation areas shown on Map 6 – Air quality must be designed and constructed to be compatible with the existing uses that have the potential for off-site air emissions in a way that:*
>
> - *limits the exposure of occupants in the development to pollutants that could have an adverse effect on human health, and*
> - *does not adversely affect the continued operation of the existing activities.*
>
> **For air emissions from the proposed development:**
>
> *Development manages the air quality amenity expectations of different land uses, especially sensitive land uses, such as odour or visible air emissions, where those emissions are demonstrated not to be hazardous to human health.*

Figure 4.1 shows the air quality constraint map (Map 6) for the Northshore Hamilton PDA. The purple shaded areas indicate the PDA's sites that might be impacted by the aforementioned industries; the level of constraint decreases as one moves farther away from the industrial facility.

Figure 4.1: Northshore Hamilton PDA Air Quality Constraint Map (Development, Northshore Hamilton Priority Development Area - Development Scheme Amendment no.1, 2022)



The above figure shows that the subject site is outside the air quality constraint areas in the Northshore Hamilton PDA. Furthermore, the development scheme also requires a maximum building height of 85 metres, as per Map 7 presented in **Figure 4.2**. Given that the proposed building height is approximately 39.1 metres as shown in **Figure 4.3**, it also complies with the building height requirement. Nevertheless, further assessments based on outcomes of air quality assessment prepared by Advanced Environmental Dynamics (AED, 2020), have been conducted to confirm that the proposed development will not be subject to any potential air quality impacts.

Figure 4.2: Northshore Hamilton PDA Building Height Constraint Map

Figure 4.3: Proposed Building Plan

Finally, potential air and odour emissions from the proposed development have been reviewed based on the requirements from Section 2.5.9.4 of the development scheme.

5. DESKTOP REVIEW

5.1 Air Emissions from Nearby Industrial Premises

5.1.1 Potential Air Emission Sources

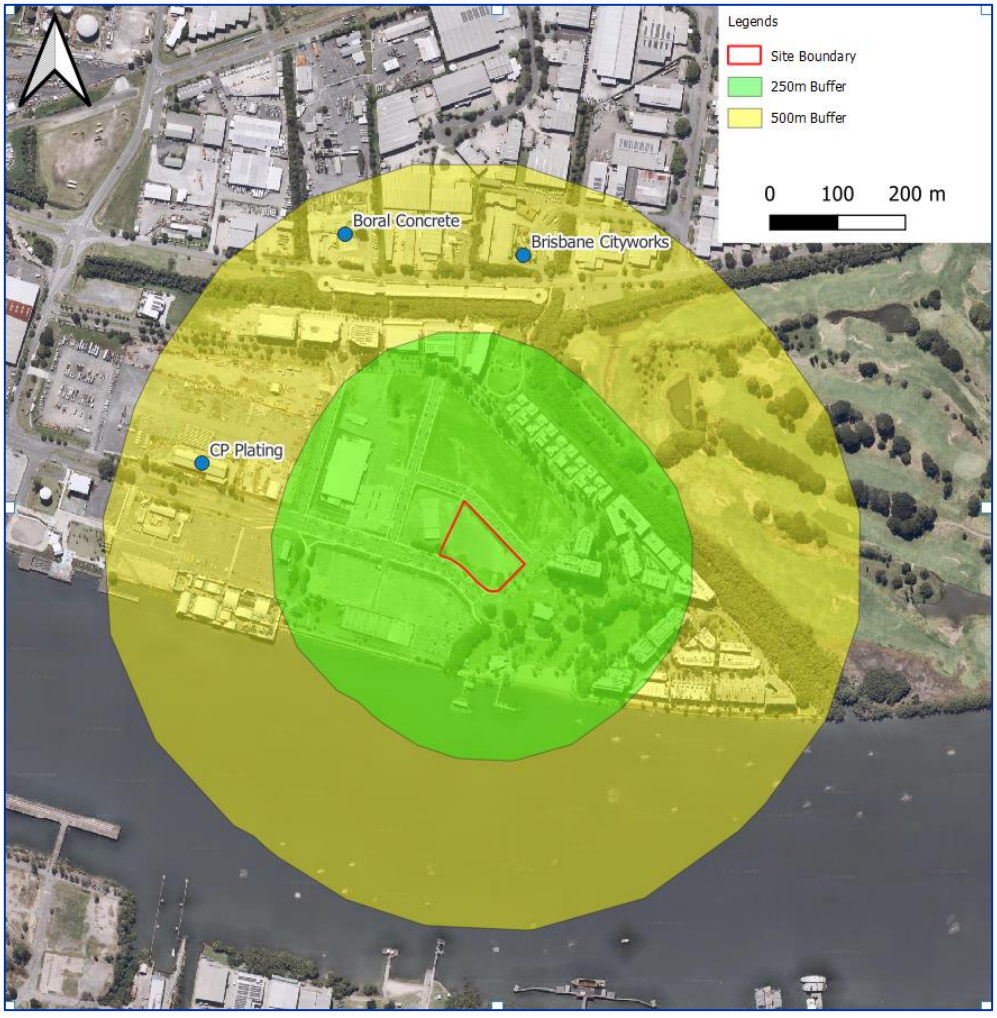
Key air emission sources were identified to assess the impacts from the industrial operations. The potential air quality risks are discussed below. The key emission sources are:

- BCC Eagle Farm Asphalt Plant (Brisbane Cityworks)
- Boral Whinstanes Concrete Batching Plant
- CP Plating

It is noted that the above listed facilities, located 360 to 420 metres away from the proposed development, may affect background values and cumulative impacts. There are other industrial uses with potential air emissions in the wider area, but these are beyond 500 metres from the subject site. Other closer land uses are considered to have minimal air quality risk for the subject site.

Figure 5.1 shows the site boundary and buffer zones in site surroundings. It is evident that all three important industries with emission sources surrounding the site are located on the periphery of the 250 m buffer. Moreover, the wind rose plot, referring to **Figure 5.2**, shows that there will be minimum influence of the emissions from the north and west direction.

Figure 5.1: Site Location and Nearby Air Emission Sources



5.1.2 Site Visit

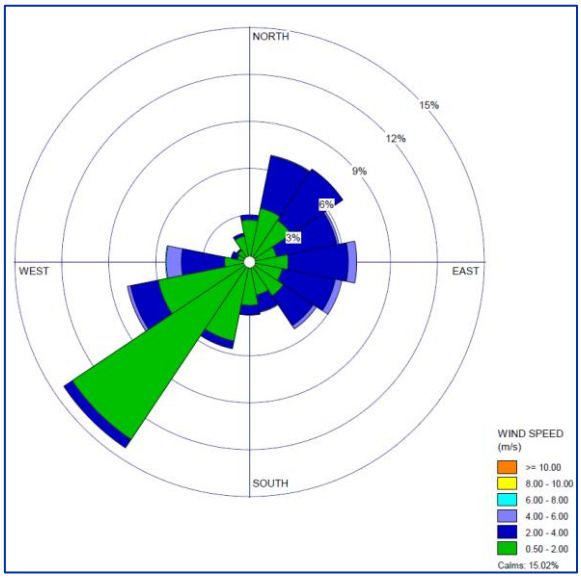
Trinity conducted a site visit on 12 September 2024 to confirm the nearby air emission sources and whether there have been an establishment of new industries in the surrounding area. The following observations were made:

- The industrial sites with emission sources that are located on Curtin Avenue are Boral Asphalt, Boral Concrete, Brisbane Cityworks. Besides these, there are other commercial spaces for warehousing, vehicle modification and mining equipment maintenance. There is another industry namely CP Plating on MacArthur Avenue. All these are ongoing and operational.
- Bitumen could be smelt around the entry gate of Brisbane Cityworks which is located towards Curtin Avenue.
- Dust could be seen on the site boundary of Boral concrete on the entry and exit gate towards Curtin Avenue.
- Other areas directly to the north of the developmental site located between Curtin Avenue and MacArthur are now mostly developed and comprise of office buildings and a parking space. The parking space is approximately 340 meters in length, 15 m width and 8 m in height. Besides this, there is also thick outgrowth of trees behind the parking space and the commercial buildings on MacArthur Avenue.
- A new commercial building was being constructed at 393 MacArthur Avenue which is about 420 m northwest of the proposed development site.
- This field visit revealed that the odour from the Brisbane Cityworks could not be smelt near the proposed development site even though there was gentle wind blowing from north to south. In addition, there was absence of any further sources of air emissions which could impact the development site.

5.1.3 Review of Local Meteorology

Historical (2019-2023) winds measured at the nearest BOM Brisbane (Raymond Park) station (approximately 6 kilometres southwest of the site) have been reviewed to gain an understanding of the prevailing winds in the Hamilton region. Based on the wind rose presented in **Figure 5.2**, predominant wind directions are from the southwest and west-southwest. There are also components from the east, west, north-northeast and northeast. The wind rose plot indicates that source-to-receiver winds (north-west to northerly) are not a dominant feature of the area (i.e. the nearest air emission sources are located upwind of the subject site the majority of the time).

Figure 5.2: Brisbane BOM Wind Rose (2019 – 2023)



5.1.4 Northshore Hamilton PDA Air Quality Constraints Modelling

An air quality modelling assessment was previously commissioned by Economic Development Queensland (EDQ) to inform the air quality constraints map of the development scheme. The outcomes of the assessment are presented in a report prepared by Advanced Environmental Dynamics (23 July 2020). Key aspects of the report are listed below:

- Modelling was undertaken for the following facilities:
  - Caltex petrol station
  - Puma Energy bulk fuel storage
  - BP bulk fuel storage
  - BCC Eagle Farm asphalt plant
  - Boral Whinstanes asphalt plant
  - Boral Whinstanes concrete batching plant
  - CP Plating
- Other industries in the area were identified (typically less intensive than the above listed) but were not modelled due to a lack of information. It is noted that these other industries were less intensive than the main air emission sources modelled.
- Modelling was undertaken using TAPM/CALMET for meteorology and CALPUFF for pollutant dispersion.
- Background concentrations from select DESI stations were adopted to account for cumulative impacts.
- Pollutant emission estimates were based on a combination of site license information, NPI, operator information and stack testing results.
- The modelling considers receptor heights of up to 37.5 metres (relative height) and receptors cover the whole of the Northshore Hamilton PDA (refer to Figure 23 of the AED Report).

The key input that may have changed since the time of the assessment is the pollutant emission rates, which is subject to the scale of operations (e.g. material throughputs, equipment capacity). For the BCC asphalt plant, it is noted that the environmental authority for the site (EPPR00463513), which specifies stack emission limits for pollutants has not changed since 2009. Operational information for the Boral sites is not publicly available (e.g. NPI, environmental authorities), nonetheless, review of Google Earth aerial photography indicates no major changes in on-site infrastructure, which suggests the Boral site operation have not changed.

It is concluded that the air modelling undertaken is considered still applicable for this assessment. Furthermore, it is noted that the modelling outcomes adequately cover the location and marginally account for the elevation of the development site. The air quality model, prepared by Advanced Environmental Dynamics on 23 July 2020, considers receptor heights of up to 37.5 metres (relative height). However, the relative building height of the proposed development is 39.1 metres. This marginal difference was deemed acceptable, as air quality levels are not expected to change significantly between 37.5 metres and 39.1 metres.

With respect to location, the subject site is outside the air quality constraints map developed by AED based on the modelling and subsequently incorporated into Map 6 of the Northshore Hamilton PDA. With respect to building height, the AED report states that "no additional air quality constraints were identified" based on the investigation in constraints for different receptor heights. This indicates that there is no additional air quality risk associated with the building height being above the maximum height defined in Map 7 of the development scheme.

The AED report discusses risks associated with odour from the asphalt facilities. It identifies that odour can still be detectable outside the air quality constraint area. The risk of impacts can be minimised by restricting window openings on the side of the buildings facing the asphalt plants (northern) and located ventilation intakes away from the asphalt plants, such as on southern facades of apartment blocks.

5.2 Air Emissions from Proposed Development

The following sections present a review of a potential air quality impacts from on-site air emission sources. Potential key air and odour emission sources were identified as follows:

- Car park ventilation exhaust
- Commercial kitchen exhaust of proposed commercial kitchens

It is noted that a few waste collection areas in the basement of the proposed development (residential and retail waste areas). Odour emissions from these areas are expected to be negligible provided they are properly managed (e.g. closure of bins, waste removed regularly) and cleaned.

5.2.1 Nearby Sensitive Receivers

As can be seen on **Figure 2.2**, all neighbouring sites to the proposed development are within the EC Emerging Community Zone. Therefore, it is reasonable to conservatively assume that all future neighbouring sites will include sensitive uses such as residential. Furthermore, the widest road reserve between neighbouring lots and the proposed development site is on the southern side, along MacArthur Avenue, where a roundabout is also located.

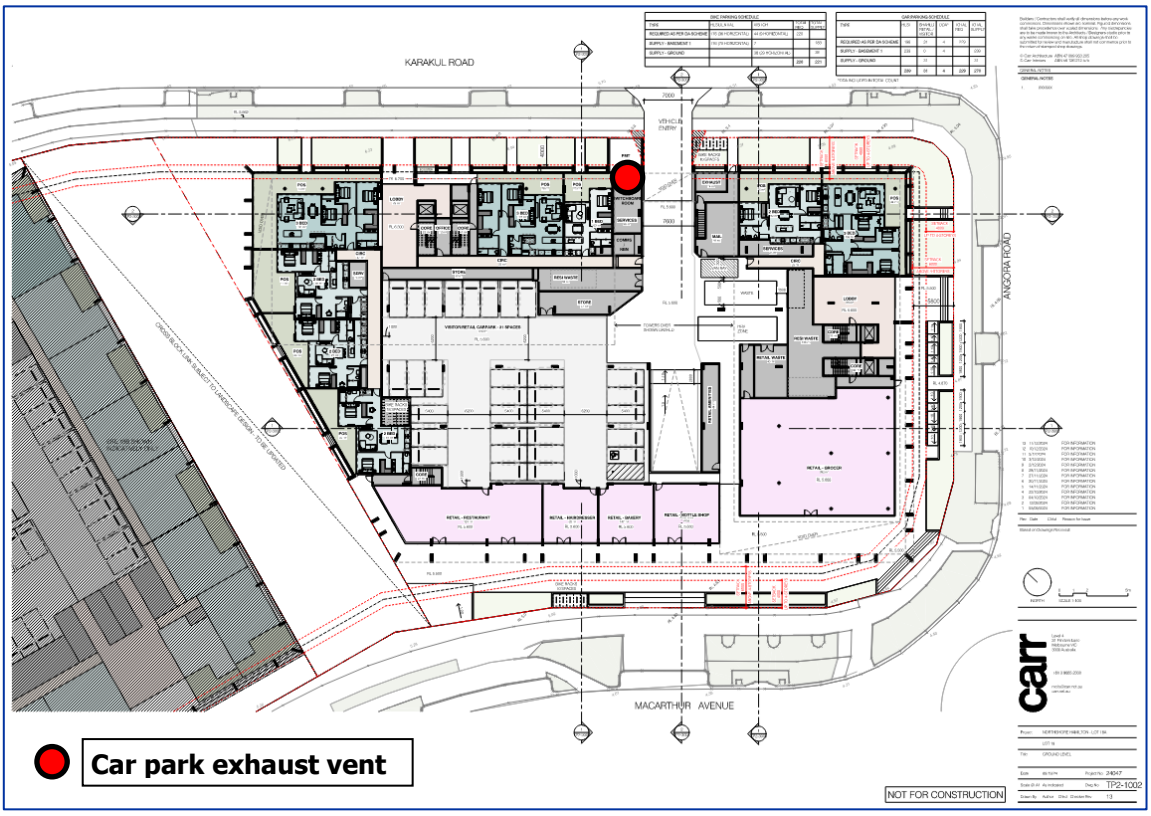
Figure 5.3: Neighbour Zones

5.2.2 Carpark Exhaust

The proposed development includes a basement car park with a capacity for 239 cars. Fully enclosed basement car parks require mechanical ventilation, which necessitates a car park ventilation exhaust as a source of air emissions. The key air quality indicators for a car park exhaust are combustion pollutants, such as carbon monoxide, nitrogen oxides and particulate matter.

Proposed location for the car park exhaust is shown in **Figure 5.4**. A residential unit is located to the west adjacent to the exhaust area and a unit is also located on the floor directly above.

Figure 5.4: Proposed Carpark Exhaust Exit Vent Location on Ground Level (markup on DA Plan TP2-1002, Rev 13 – Ground Level)



According to Section 2.5.9.4 of the Northshore Hamilton PDA development scheme, the proposed development is required to manage air quality amenity expectations for sensitive land uses. Additionally, the relevant Brisbane City Council (BCC) development codes recommend a setback distance of 15 metres as an acceptable outcome for a car park exhaust, which can also be used as a guide for the proposed development.

Given that proposed carpark exhaust is in close proximity to residential units, it is recommendation that the location/design be reviewed in further detail (e.g. dispersion modelling). Based on experience with similar separation distances and similar sized car parks, compliance with air quality goals are achievable but mitigation may be required (e.g. directing air a certain direction away from receptors, using barrier fins to block air flow, filtration, etc). It is noted that compliance with the 6 m separation distance specified in *AS 1668.2 The use of ventilation and air conditioning in buildings, Part 2: Mechanical ventilation in buildings* is also achievable for the adjacent unit on the same floor. This would require optimising the ventilation outlet size and locating it to the most eastern part of the exhaust space (furthest from the adjacent residential unit on the same level).

5.2.3 Commercial Kitchen Exhaust

Two uses with commercial kitchens are identified on the DA plans at ground floor to service the following potential tenancies:

- Restaurant
- Bakery

Both uses are located on southern side of the development site, facing MacArthur Avenue.

Air and odour emissions from the bakery are expected to be relatively low given the type of cooking occurring (baking of bread) and use of electric ovens (as opposed to other methods of cooking such as wood-fire and charcoal). Relative to other types of cooking odour, bakery odour may be considered less offensive, however, there is still a potential for odour impacts, given the regularly use of the bakery and emissions occurring early in the morning (when weather conditions may be calm and less conducive to dispersing odour). As a minimum,

space in the ceiling space of the tenancy (or elsewhere) should be available to allow for the installation of an odour control system, should complaints arise in the future.

The proposed development includes a restaurant with a commercial kitchen for cooking activities. While the type of dining options in the development are not known at this time and can vary widely, it has been recognized that restaurants and commercial kitchens are sources of air pollution, which can lead to adverse impacts to air quality and create nuisance to the community. Emissions from food establishments can include grease, particulate matter, and volatile organic compounds (VOCs).

Cooking with the use of wood, gas, and charcoal generates smoke and fumes which carry particulates that are in the $PM_{2.5}$ and PM_{10} range. These particles are known to contain toxic compounds, such as polycyclic aromatic hydrocarbons (PAHs), benzene, and toluene, which may pose health risks. Deep frying, stir frying, roasting and barbecuing also emit oil and grease mist particles. Apart from odour issues, these emissions can also lead to fallout and subsequently deposition on nearby land and properties. A range of VOCs, which contribute to odour issues, result from the breakdown of natural oils and fats during the cooking process. The intensity of the odour can vary widely, depending on the preparation or cooking methods employed and the type of food being prepared.

According to Section 2.5.9.4 of the Northshore Hamilton PDA development scheme, the proposed development must manage air quality amenity expectations for sensitive land uses. The closest sensitive uses include potential future offsite receptors located within the nearest EC Emerging Community Zones, as well as onsite residential units proposed for the ground and upper floors. Additionally, it is important to note that the proposed restaurant is located directly beneath the outdoor communal area on the Level 1 podium. A commercial kitchen exhaust positioned directly below such a use may cause nuisance impacts to this area if not effectively managed.

Various guidelines and best practices offer an array of options or control measures designed to effectively address potential air and odour issues arising from emissions in commercial kitchens. These are:

- Separation distance: Maintaining an adequate buffer distance between an emission source, such as a kitchen chimney, and nearby sensitive receptors is crucial for reducing the risk of air and odour issues. A separation distance of more than 50 metres is generally considered sufficient to facilitate natural dilution (Westminster City Council, 2021). However, this distance is not achievable for the proposed site.
- Dispersion of emissions: Releasing smoke or fumes through a properly designed stack above roof level is an effective method for controlling and dispersing air pollutants and odorous compounds. However, since the proposed restaurant is located beneath the outdoor common area, ducting an exhaust stack back towards the proposed 9-storey building and up to roof level is unlikely to be a feasible solution. Also, the required stack height may be excessive as proposed building height is 39.1 metres from the natural ground level.
- Odour control equipment: Prior to discharge to the atmosphere, it is possible to remove air and odorous compounds through appropriately designed and well-maintained emissions and odour control systems. Examples of control equipment include:
  - Activated carbon systems is a widely recognized exhaust or odour capture system, which can reach up to 99%+ efficiency in adsorbing odorous molecules.
  - Electrostatic precipitators (ESPs) and wet scrubbers remove particulates that are present in smoke and fumes. These emission control systems are more suitable for larger commercial kitchens and effective in eliminating visible particulates.
  - Fitting exhaust hoods with hood or grease filters is essential to reduce the grease particle load of exhaust gases. It also protects the carbon filter from excessive dust and grease.
  - To utilise odour control equipment efficiently, temperature and humidity level in kitchen shouldn't exceed 28 °C and 70%, respectively. Also, approximately 85% of the exhaust extract flow rate should be supplied into the kitchen as makeup air.

To effectively manage the risks associated with emissions from the commercial kitchen exhaust, Trinity recommends odour control equipment for the proposed restaurant. The control system should allow for the removal of particulates (e.g. ESP) and odour (e.g. activated carbon, ozone system). As noted previously, for the bakery, as a minimum, space in the ceiling space of the tenancy (or elsewhere) should be available to allow for the installation of an air quality control system, should complaints arise in the future.

It is possible that the final tenancy uses may ultimately differ from those identified in the ground floor plans (with potentially other food catering tenancies). In general, commercial kitchens, other than those where simple heating of food is undertaken (e.g. no cooking, reheating, sandwiches), then an air quality control system is recommended.

6. CONCLUSIONS

Trinity Consultants Australia was commissioned by Silverstone Developments to provide an air quality impact assessment for the mixed-use development proposed for Northshore Hamilton. The proposed development site is situated within the Northshore Hamilton Priority Development Area, close to several major industries including an asphalt plant, a concrete batching plant and a plating industry. Furthermore, the proposed development also introduces emission sources, e.g., car park exhaust and commercial kitchen exhaust.

To evaluate the effects of emissions from nearby industries and the proposed development itself, the following methodology was used:

- Review of the relevant documents including:
  i. Northshore Hamilton Priority Development Area, Economic Development Queensland, 2022.
  ii. Northshore Hamilton Priority Development Area Air Quality Constraints Assessment
- Desktop/qualitative review and site visit

The proposed development site is outside of the PDA air quality investigative areas and based on this, air quality is compatible for the development of the site for sensitive uses. It is noted that the proposed building height is within the maximum development scheme height of 85 metres. Furthermore, the air dispersion modelling prepared by AED on behalf of EDQ, which was used to develop the air quality constraints map in the development scheme, takes into consideration the subject site location and proposed building height.

All three major industries with air emission sources are located on the periphery of a 250 m buffer of the development site, to the north and north-west of the site. The wind rose plot shows that the predominant wind directions are from the southwest and west-southwest direction indicating that there will be a low risk of emissions from the north and north-west direction.

A desktop review and site visit were carried out to determine the establishment of new industries in the surrounding area and additional emission sources. There were no additional air emission sources identified (compared to those already considered in the AED air quality constraints report) and an online review suggests these industries have not changed in capacity.

The AED report discusses risks associated with odour from the nearby asphalt facilities. It identifies that odour can still be detectable outside the air quality constraint area. The risk of impacts can be minimised by restricting window openings on the side of the buildings facing the asphalt plants (northern) and located ventilation intakes away from the asphalt plants.

Regarding emissions from the proposed development, following recommendations are advised to manage potential impacts from car park exhaust and commercial kitchen exhaust:

- Given that proposed carpark exhaust is in close proximity to residential units, it is recommendation that the location/design be reviewed in further detail (e.g. dispersion modelling). Based on experience with similar separation distances and similar sized car parks, compliance with air quality goals are achievable but mitigation may be required (e.g. directing air a certain direction away from receptors, using barrier fins to block air flow, filtration, etc). It is noted that compliance with the 6 m separation distance specified in *AS 1668.2* is also achievable for the adjacent unit on the same floor. This would require optimising the ventilation outlet size and locating it to the most eastern part of the exhaust space (furthest from the adjacent residential unit on the same level).
- Commercial kitchen exhausts:
  - Proposed restaurant - the proposed restaurant with a commercial kitchen is located directly beneath the outdoor communal area on the Level 1 podium. To effectively manage the risks associated with emissions from the commercial kitchen exhaust, Trinity recommends odour control equipment. The control system should allow for the removal of particulates (e.g. ESP) and odour (e.g. activated carbon, ozone system).

- Bakery - as a minimum, space in the ceiling space of the tenancy (or elsewhere) should be available to allow for the installation of an air quality control system, should complaints arise in the future.
- It is possible that the final tenancies may ultimately differ from those identified in the ground floor plans (with potentially other food catering tenancies). In general, commercial kitchens, other than those where simple heating of food is undertaken (e.g. no cooking, reheating, sandwiches), then an air quality control system is recommended.

Based on this review, it is concluded that the impacts of air pollution from the nearby emission sources and onsite emission sources are expected to be within acceptable limits with the recommended mitigation in place, thus meeting the requirements of the Northshore Hamilton Priority Development Area Development Scheme.

REFERENCES

Advanced Environmental Dynamics. (2020). *Northsore Hamilton PDA Air Quality Constraint Assessment Report.* Brisbane: Economic Development Queensland.

Council, B. C. (2023). *Brisbane City Plan.* Brisbane: Brisbane City Council.

Development, D. o. (2022). *Northshore Hamilton Priority Development Area - Development Scheme Amendment no.1.* Hamilton: Economic Development Queensland.

Westminster City Council. (2021). Prevention of odour and fume nuisance from commercial kitchen exhaust systems. Environmental Health Department, City of Westminster. Retrieved from https://www.westminster.gov.uk/westminster-environment-guidance-section-b/section-b-odour

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